



Specific Toxicology Note




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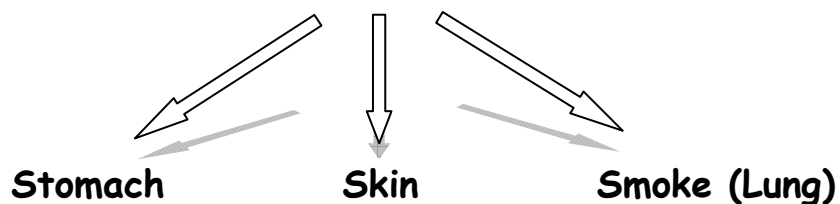
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Specific Toxicology

CHAPTER 2**CORROSIVES****Scheme:**

- 1- Effect of Poisoning.
- 2- F.D
- 3- F.P
- 4- Action
- 5- C/P
- 6- P.M.P
- 7- Ttt
- (+/-)
- 8- Source & Uses
- 9- Kinetics
- 10-Diagnosis (Investigations)
- 11- D.D

Inorganic (Typical)	Organic (Atypical)
1- Strong 2- Local 3- XXX Emesis/Lavage 4- E.g.: -H ₂ SO ₄ -HNO ₃ -HCL Potash	1- Mild 2- Mixed ↗ Local ↘ Remote 3- √√√ Emesis & Lavage 4- E.g.: -Carbolic acid -Oxalic acid

Specific Toxicology

	H ₂ SO ₄ (Acid)	Potash (Alkalies)
1-Source & Uses:	- Chemicals → Batteries → Laboratories	-Chemicals → Cleaning
2-Diagnosis (Investigation)	-As before	-As before
3-Condition Of Poisoning:	→ Accidental → Child → Workers → Addicts → Therapeutic → Suicidal → XXX → Homicidal → Face (Revenge) → Disfigurement → Blindness	→ Accidental → Children (Milk) XXX XXX
4-Fatal Dose:	4 c.c	K ₂ CO ₃ Na ₂ CO ₃ ↘ x2 15gm 30 gm
5-Action:	Local <u>ONLY</u> : A-Hygroscopic effect: (Absorbs Water From Air) ↓ ↓ ↓ Stomach Skin Smoke B- Coagulative necrosis	A-Hygroscopic effect (Milder) B- Liquefactive necrosis (Slimy & Soapy appearance)
6-C/P:	→ Laryngeal edema & Asphyxia -Smoke → Eschars (Colored ulcers) H ₂ SO ₄ → Black -Skin → -Stomach → 1-Pain & Swelling ↓ 4 <u>S</u> 2- <u>S</u> wallow (Dysphagia) <u>S</u> peech (Dysarthria) <u>S</u> hock (Neurogenic) <u>S</u> tomach (<u>P</u> erforation) →	-√√√ NH ₃ Fumes. -Eschars White √ √ √ √ Rare

Specific Toxicology

	3-Vomiting (Acidic Haematin) ↓ Café Brown ↓ 4-Constipation ↓ 5-Dehydration ↓ 6-Shock ↓ 7-Oliguria ↓ -Temp → ↓↓ -Pulse → Rapid weak -B.P → ↓↓ -Resp. → Shallow rapid	3 Vomiting (Alkaline Haematin) ↓ Soapy ↓ 4-Diarrhea ↓ 5- ✓ ↓ 6- ✓ ↓ 7- ✓ ↓ -Temp → ✓ -Pulse → ✓ -B.P → ✓ -Resp. → ✓
7-Cause of Death & fatal Period:	S A D / P C ↓ ↓ ↓ ↓ ↓ Shock Asphyxia Dehydration Perforation Cachexia& (Neurogenic) (Few hrs) (12 Hrs) (Days) Emaciation ↓ Immediate > In acids > In alkalis ↓ Stricture	
8-P.M.P:	SUS → 1- Ulcers & Perforation + SES → 2- Eschars (Black) + <u>Brain</u>	→ 1- Ulcers → 2- Eschars (<u>White</u>)

Specific Toxicology

	+ <u>Passages</u> → 3- Internal & External signs of asphyxia + <u>PM changes.</u>	→ 3- Internal & External signs of asphyxia ⊕ <u>Narrowing of lower end of esophagus</u>
9- ttt:	1- <u>Supportive & Symptomatic ttt:</u> <pre> graph TD SADPC[SAD/PC] --> SO[Surgical Operations] SADPC --> LA[Laprotomy + Antibiotic] SADPC --> FT[Friable Tissues] SADPC --> PS[+ Pervious Stuff] SADPC --> M[+ Morphine] M --> P[5-10 mg IV for pain] SADPC --> J[4-Jej.deposition] SADPC --> C[5-Cortisone+ Antibiotic] C --> TS[To prevent Stricture] </pre> 2- <u>E.C.G</u> → XXX 3- <u>Local Antidote</u> → - Demulcent - Neutralisation → XX due to..... 4- <u>Dialysis, Diuresis & Heamoperfusion</u> → XX 5- <u>Physiological Antidote</u> XX → Doesn't reach Blood <u>Syptomatic ttt:</u> Skin ttt: - Wash by water - Antibiotics - Skin Graft	

Specific Toxicology

	Carbolic Acid "Phenol" (4) "4 Points"	Oxalic Acid (ابيض)
	Renal Failure Local anaesthesia Coagulative Necrosis -CNS ↑ → ↓ -CVS	Similar to الملح السكر بيحب اللبن "أبيض" فيه Ca
1-Fatal Dose:	<u>4</u> gm	<u>15</u> gm
2-Fatal Period:	-Early → <u>4</u> Hrs -Delayed → <u>4</u> Days	-Rapid → <u>15</u> min - Delayed → <u>15</u> Days
3-Diagnosis (Investigation)	-As Before	-As Before
4-Source & Uses:	-Coal -tar -Disinfectant (Dettol)	-Rhubarb -Ink Remover
5-Condition of Poisoning:	1-Accidental: → -Children → -Workers 2- Suicidal: → -Cheap → -Easily Obtained → -Local Anaesthesia 3- Homicidal: XXX Due to characteristic Smell	1-Accidental → -Workers → -Children Similar to Sugar & Salt crystals
6-Action:	<u>Mild</u> → <u>Mixed</u> 1- <u>Local</u> : 1- <u>S</u> tomach → Coagulative necrosis → Local anaesthesia	1- <u>Local</u> : → 1- Mild Corrosives + Coagulative necrosis.

Specific Toxicology

	2-<u>S</u>kin → Eschars (Brown) 3-<u>S</u>moke → Characteristic Smell 2-Remote: 1- CNS ↑ ↓ → as before 2- CVS ↓ ↓ → as before 3- Renal failure → as before	→ 2- White Eschars. → 3- Smoke → 2-Remote: +Ca → Ca Oxalate ↓ Ca in Blood ← Crystals 1-<u>C</u>ontraction of Ms. → as before 2- <u>C</u>VS affection → as before 3-<u>C</u>ollecting tubules → Renal Failure
7-C/P:	1-<u>S</u>tomach → Pain & Vomiting ↓ Rapidly Local Anaesthesia ← XX 2-<u>S</u>kin → Chocolate Brown Eschars 3-<u>S</u>moke → Smell 4-<u>C</u>NS → as before +Miosis 5-<u>C</u>VS → as before +Arrhythmia 6-Renal Failure → as before +Urine Green in color Once exposed to air → Oxidation ↓ Hydroquinone	1- → Pain & Vomiting <u>White</u> due to Ca oxalate Crystals 2- → <u>White</u> Eschars 3- → in chronic Toxicity ONLY. Remote: 1- Contraction (as before) → "Convulsions" Resp. Ms" ↓ Peripheral Asphyxia 2- CVS (as before) → Arrhythmia 3- Collecting Tubes → + <u>White</u> Ca Oxalate Crystals

Specific Toxicology

8-ttt:	<u>1-Supportive & Symptomatic ttt:</u> As before + Met-hemoglobinanaemia ↓ Corrected by Vit C Or Methylene Blue 1mg/Kg <u>2-Elimination of Poisons From GIT: (ECG)</u> - Done → - No Vomiting → - Thickened Stomach ↓ So, No fear from perforation <u>3-Local Antidote:</u> -Demulcent → لين -Alcohol 10% → كحول (Dissolvent) -MgSO₄ → ملح <u>4-D. & D. & H.</u> <u>5-Physiological Antidote:</u>	<u>1-Supportive & Symptomatic ttt:</u> -RF→Resp.Failure } as before -RF→Renal Failure } ↓ Diazepam ↓ 2mg -Convulsion → as before <u>2-Elimination of Poisons From GIT: (ECG)</u> → √√√ <u>3-Local Antidote: Milk</u> (Demulcent) ↓ Form ← To precipitate Ca Oxalate Oxalic acid <u>4-D. & D. & H.</u> → √√ <u>5-Physiological Antidote: IV Ca Gluconate</u>
9-Cause of Death:	<u>1-Respiratory Failure</u>→ Central Asphyxia <u>2-Renal Failure</u>→ Direct <u>3-CVS</u>→ Cardiac Arrest	<u>1-Respiratory Failure</u>→ Peripheral Asphyxia <u>2-Renal Failure</u>→ Obstructive <u>3-CVS</u>→ Arrhythmia

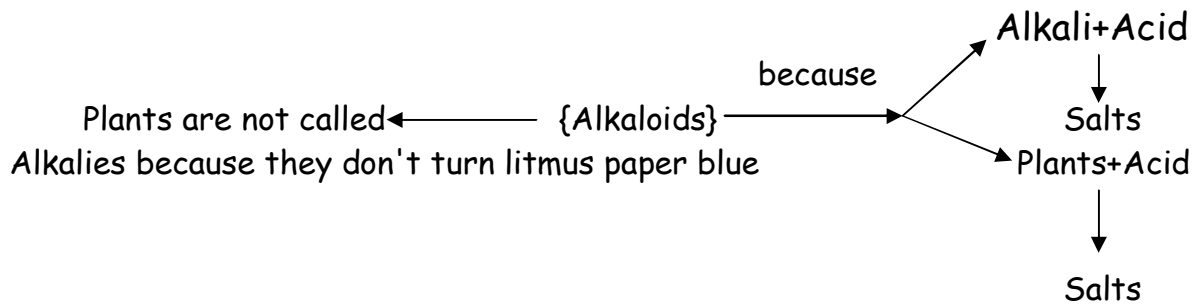
Specific Toxicology

10-P.M.P:	SUS → 1-Smell 2-Sup.Ulcers + Thickened Stomach + SES → 3-Brown Eschars + Brain → 4-Brain Edema + Congestion + Passages → 5-Int.& Ext. Signs of Asphyxia + PM picture + C/P → 6-Kideny Congested Enlarged Tense Capsule	SUS → 1- Sup.Ulcers + SES → 2-White Eschars + Brain + Passages → 3-Int.& Ext. Signs of Asphyxia + PM picture + C/P → 4-Kideny Affection + Ca Oxalate Crystals 5-Dilated Heart
11-D.D:	<u>3C</u> <u>C</u>oma <u>C</u>yanosis <u>C</u>onstricted Pupil 1- Morphine 2- Carbolic Acid 3- Organo-Phosphorus 4- Pontine hge	<u>In Stomach:</u> Arsenic → White Powder ↓ Diff. from Ca Oxalate By Reinsch Test

*Specific Toxicology***ORAL:**
ROLE OF MILK:-

<u>H₂SO₄</u>	<u>Carbolic Acid</u>	<u>Oxalic Acid</u>
Demulcent	Coagulation ↓ To spare stomach proteins	Precipitation

PLANT POISONS



OPIUM (MORPHIN)

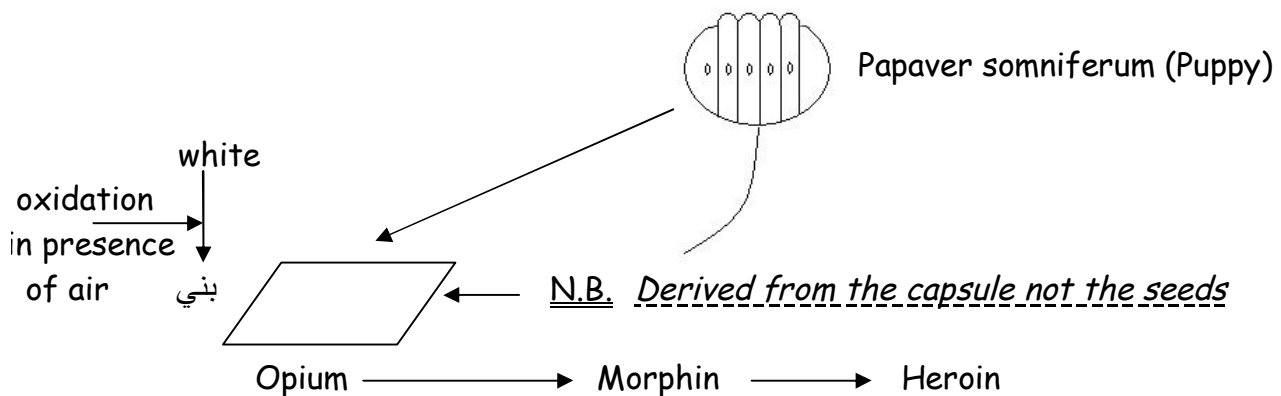
3V
5C

General ↓

Characters of plants:

- 1) Alkaloids → Doesn't turn litmus paper blue
- 2) Flower → Far action
- 3) Local Antidote →
 - 1-Charcoal (adsorption)
 - 2-Tannic acid (PPT)
 - 3-H₂O₂ & KMNO₂ (Oxidation)

1-Source



Opium	Morphine
Smell (meconic.a)	XXX
Ingested	Injected

2-Uses

- 1-Pain killer
- 2-Shock
- 3-Morphin addicts

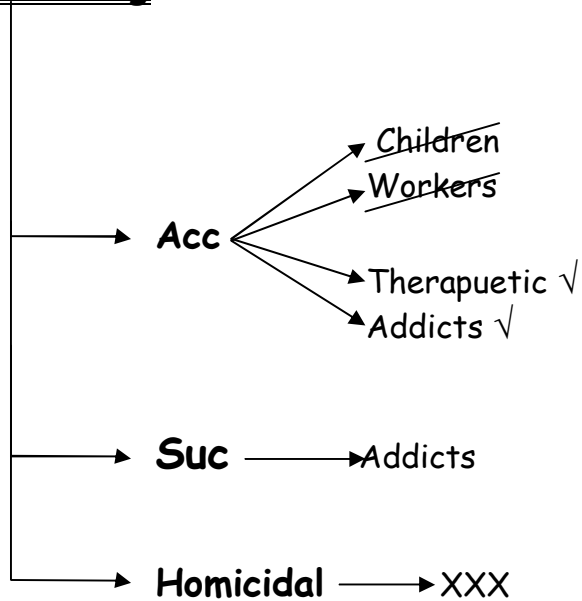
3-Diagnosis

- Search for
- As before

Morphine+

Meconic a

4-C.of poisoning



5-Fetal dose

Morphine
→ 100mg

6-Fetal period

Mid day
12 hours

Action+ C/P

3V ← Action → 5C	C/P
↑ & ↓ 1- ↑ <u>V</u>agus 2- ↑ <u>V</u>omiting center 3- ↑ <u>V</u>CC (Visual constrictor Center) 4- ↓ <u>C</u>ortex (sensory) 5- ↓ <u>C</u>ough center 6- ↓ <u>C</u>enter of heat 7- ↓ <u>C</u>onsciousness{CNS} 8- ↓ <u>C</u>olon & Bladder	↓ BP, ↓ Pulse, ↓ Resp Vomiting → smell of opium Pin point pupil (fixed) Euphoria → Dysphoria (due to over dose) Pulmonary edema (Stertorous resp) → (smell of opium) ↓ Temp Coma, Cyanosis, Central asphyxia Constipation, Urine retention

P.M.P

S~~U~~~~S~~ → 1-Smell of opium
→ 2-No seeds in stomach

+

S~~e~~S → 3- Needle

+

Brain → 4-Brain edema
(Pontine Hge) + Pontine Hge

+

Passages → 5-Int&Ext
+Pulmonary edema

+

P.M.P XX

+

C/P XX

D.D. : 3 C → Coma
 → Cyanosis
 → Constricted pupil

Carbolic acid	Morphine	O.P	Pontine hge.
History	History	History	No History
Smell <u>characteristic</u>	<u>Meconic acid</u>	<u>Garlic</u>	No smell
Low temp.	Sub normal	low	<u>hyperthermia</u>
<u>Irregular pulse</u>	Slow & full	slow	-----
Constricted pupil	<u>Fixed P.P.P</u>	Constricted	Constricted
normal	normal	<u>convulsions</u>	<u>quadriplegia</u>
Chemical analysis	Chemical analysis	Chemical analysis	<u>No Chemical analysis</u>

Urine : Green

TTT :

- 1) S&S → Resp.
- 2) ECG → √√√ - even if injected
 - cuffed endotracheal tube (v.imp.)

Due to ↓ cough reflex
 ↓
 avoid asp. pneumonia

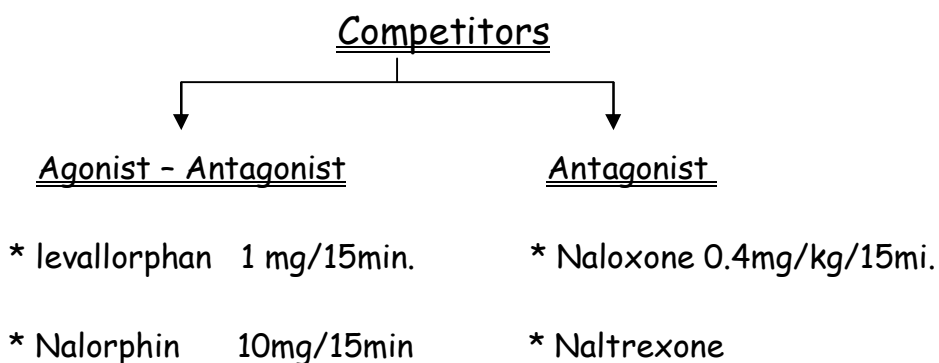
3) local antidote:

- a) charcoal
- b) tannic acid
- c) H₂O₂ , KMNO₂

4) D & D & H

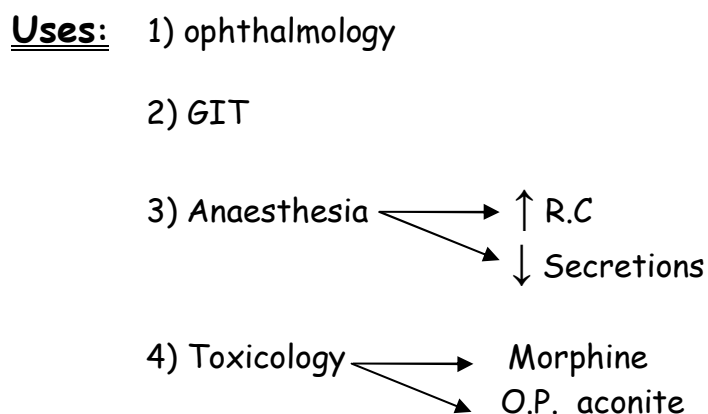
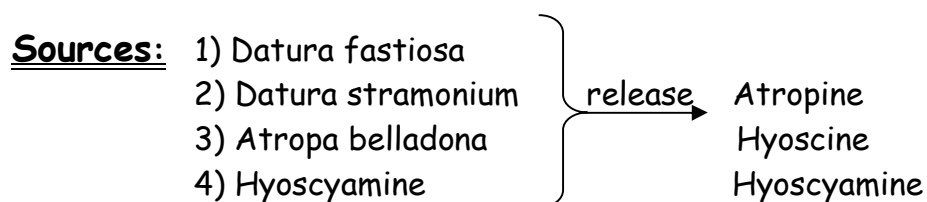
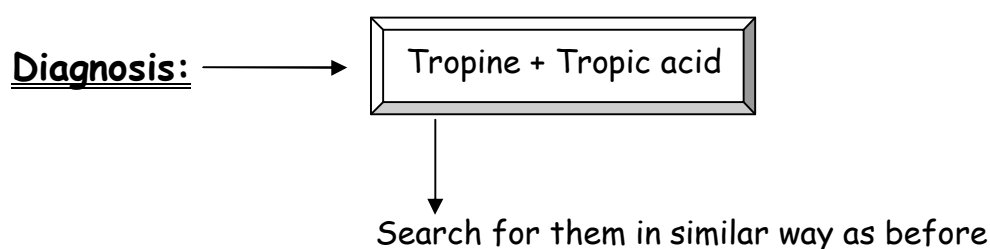
5) physiological antidote → Antagonists → Atropine (1-2 mg)
 → Competitors

5) physiological antidote



Cause of death : —————→ Central Asphyxia

ATROPINE , HYOSCYAMINE & HYOSCINE



F.D.: Atropine & Hyoscyamine → 100 mg

Hyoscine → 30 mg

F.P.: Datura → Day 24 hrs

Cause of death : → central asphyxia

C.of poisoning:

Acc.	Suic.	Homicidal
- Children - Therapeutic - Addicts MAN Marijuana Atropine Nutmeg (hepatotoxic) + Jaur	- Addicts	- Road poison (<u>hyoscine</u>) - Assaults - Rape - Robbery

Actions :

Atropine & hyoscyamine	Hyoscine
1) CNS $\uparrow \longrightarrow \downarrow$ 2) Peripheral receptors $\swarrow \searrow$ ACH. Muscarinic	$\swarrow$ <u>H</u>igh $\longrightarrow$ 1) CNS $\downarrow$ (used in case of mania , Motion sickness, parkinsonism, Obstetric analgesia) 2) Peripheral $\longrightarrow$ similar to atropine & hyoscyamine but <u>weaker</u>

Clinical picture:

Plant Poison

- 1 $\longrightarrow$ Dry as bone
- 2 $\longrightarrow$ Red as beet root
- 3 $\longrightarrow$ Hot as hare
- 4 $\longrightarrow$ Blind as bat
- 5 $\longrightarrow$ Mad as wet hen
- 6 $\longrightarrow$ Bladder lose its tone
- 7 $\longrightarrow$ Heart runs alone

Peripheral actions :

1) ↓ Secretion → Sweat , Saliva , Secretions (bronchial)



(dysphagia, thirst & hoarseness of voice)

2) V.D. → Rush

3) ↑ Temp.

4) Mydriasis & Fixed Non reactive Pupil

5) Constipation & Urine retention

6) ↑ Pulse , ↑ B.P. & ↑ Resp.

CNS : CHAIR

* Occupational Delirium

* Drunken Gait → Staggering Gait. = Unsteady Gait

P.M.P.:

~~S~~~~U~~~~S~~ → 1-Seeds

+

~~S~~~~E~~~~S~~

+

B → 2-Brain edema & congestion

+

P → 3-Int. & external signs of asphyxia

(dry air passages)

+

P → 4-Putrefaction

****N.B. → Resist putrefaction**

1-Metal

2-O.P

3-Nicotine

4-Strychnine

TTT:

4×2

- 1- S& S → Resp.
- 2- ECG + local antidote

v.v.imp.

- Cold foment → for atropine fever (v.v.imp.)
- Catheter → for urine retention (v.v.imp.)

v.v.imp.

- Sedative & tranquillizers → in stimulation stage (v.v.imp.)
- Stimulants → in depression stage

3-D & D

4-physiological antidote

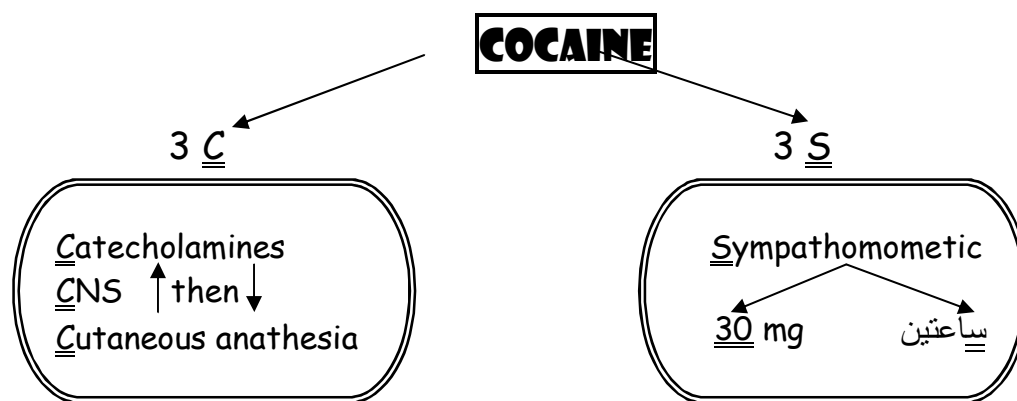
A-Pilocarpine 10mg
(peripheral action only)

B-Eserine (physostigmine) 2mg
peripheral action
central action (it can cross BBB)

Easy To Pass BBB
So, act centrally & Peripherally

D.D.

	Atropine	Ethyl alcohol
1- Smell	-----	(Characteristic)
2- Temp.	↑↑	↓↓↓
3- Pupil	Dilated & fixed	Changeable (Mc Ewin's sign)
4- Skin	Hot, dry & flushed	Moist & pale
5- Vomiting	-----	(May occur)
6- Delirium	Occupational	Tremors on withdrawal
7- Chemical analysis	+ve	+ve



1- Sources: Leaves of erythroxylon.

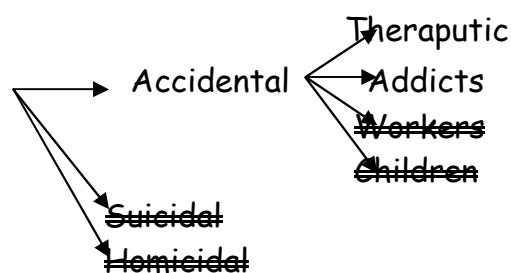
2- F.d: Sympathomimetic 30 mg.

3- F.p: ساعتين 2 hrs.

4- Diagnosis: as before

+ search for cocaine metabolism in urine.

5- Condition of poisoning:



Action	C/P	
1. ↑. <u>C</u> atecholamine release & ↓. uptake. 2. <u>C</u> NS stimulation then depression. (psychosis) 3. <u>C</u> utaneous anaesthesia	Stimulation 1. C.V.S: ↑. BP, ↑ pulse. 2. Resp.: ↑. Rate & depth. 3. CNS: CHAIR + psychosis + Hallucination + Delusions + Illusions + Euphoria + <u>Alertness</u> ↓ ↑. Quality not Quantity 4. Cutaneous anaesthetic effect.	Depression ↓ ↓ ↓ ↓ cardiac arrest ↓ ↓ ↓ ↓ Coma, Cyanosis, Central asphyxia. ↓ Cutaneous anaesthesia.

Cause of death:

- 1- Cardiac arrest (minutes)
- 2- Central asphyxia (ساعتین)

P.M.P

~~S~~ ~~U~~ ~~S~~

+

~~S~~ ~~E~~ S → 1- Site of injection

+

B → 2- Brain edema + congestion

+

P → 3- Internal + External signs of asphyxia

+

P.M.P → 4- Putrefaction ~~X~~ ~~X~~ ~~X~~ ~~X~~
Rapidly destroyed after death.

Treatment:

1- S & S → 1- Care of respiration.
2- Care of C.V.S.

2-ECG → √√√

3- Local antidote → 1- Charcoal.
2- Tannic acid.
3- H₂O₂ & KMNO₂.

4- D & D → √√√

5- Physiological antidote → ~~X~~ ~~X~~ ~~X~~ ~~X~~

Inhaled → Nose → Wash with saline.

Injected → Wash with ice.

Imp. Correction
of: Hypertension
+
Convulsions

DIGITALIS

Dysrhythmias
Dye vision
Diarrhea
Drowsiness
Dermatological

- 1- Source → Digitalis Lanata Or
~~ purpureae.
A.P → Digitalin
Digitoxin.
- 2- F.d → ثلاثين 30 mg → digitalin
5 mg → digitoxin.
- 3- F.p → Day → 24 hrs.
- 4- Diagnosis → as before + ECG + Electrolytes + Digitalis
↑
search for
- 5- Uses → 1- CHF
2- Atrial arrhythmias.
- 6- C. of poisoning → Accidental → Therapeutic
Children
Suicidal √√
Homicidal × ×

Action:

Mode of action	Therapeutic
Inhibition of Na-K ATPase enzyme <u>Intracellular</u> ↑ Na ↑ Ca ↓ Yeast <u>Extra cellular</u> ↑ K (acute toxicity) ↓ K (chronic toxicity)	1. +ve ino. → ↑. contractility 2. -ve chrono → ↓. HR 3. ↑renal blood supply (diuresis & ↓B.P.)

Toxic Dose	C/P
1. Heart → Autoimmunity 2. Eye → Dye vision 3. GIT → Irritant 4. Skin → Allergy 5. CNS	→ Dysrhythmias (details in next table). → Green-yellow vision / Photophobia / blurred. → Nausea, vomiting, colic, diarrhea → Urticaria & Gynecomastia. → Drowsiness, confusion, hallucination, restlessness, frank psychosis.

C/P of Heart:

Tachycardia		Bradycardia
Atrial	Ventricular	1. Sinus bradycardia. 2. Sinus arrest. 3. A-V block.
1. A. tachycardia. 2. A. flutter. 3. A. fibrillation.	1. Extrasystole. 2. V. tachycardia. 3. V. fibrillation.	

P.M.P:

§ U S → 1- Tablets or leaves or seeds.
2- No ulcers → Stomach irritant.

+
§ E §

+
§

+
✓

+

P.M.P → 3- Putrefaction.

+

C/P → 4- Heart → Dilated
→ Hypertrophy
→ Pulmonary congestion

Treatment: of Digitalis toxicity

1- S & S → Care of the heart

Anti-arrythmic drugs

A P P L

Atropine
(1-2 mg)

Pacemaker

Phenytoin

Lidocaine

Electrolyte

↓ K → KCL
↑ K → Insulin + glucose
& ↓ Mg / MgSO₄
↑ Ca → Na₂EDTA

2- ECG → √√√

3- L.A. → as before √√

1- Charcoal.
2- Tannic acid.
3- H₂O₂ & KMNO₂.

4- D. & H → √√√

5- Physiological Antidote → Digibind (Fab) → 40 mg

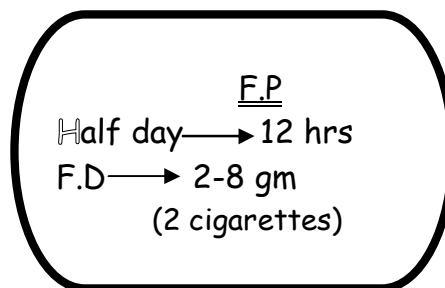
1- Preparation → خروف

Digitalis injected → Ab → Fragment it → ○○○○
formed against digitalis

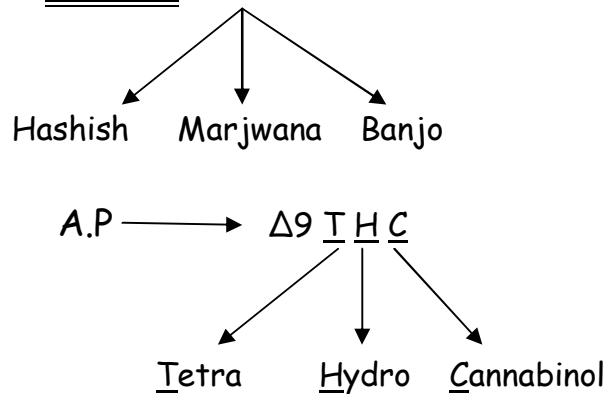
2- Dose → 40 mg/ 20min (IV infusion).

3- Action → ↑digitalis excretion & reversed tissue binding.

HASHISH (Systems)



1- Source: Cannabis/ indica



2- Investigations → As before + Δ^9 THC

3- C. of poisoning

- Accidental → Abusers
- Suicidal ✓✓✓ very rare
- Homicidal XXX

Action:

Psychoactive:

CNS ↑ & ↓

- 1- Dose
- 2- Type
- 3- Personality (Mood)
- 4- Previous exposure

C/P

Psychological & Neurological	Eye	Resp.	C.V.S	GIT	Reproduction
1- 25 mg/kg THC ↓ Sense of well being. (Euphoria) 2-250 mg/kg THC ↓ <u>Inc. senses:</u> • Smell • Sound • Touch • Colour 3- >250 mg (details later)	Red Eye (Conjunct. cong.)	↓ ppt. to cough ↓ Central asphyxia	↑. HR ↓ Ppt. to angina	↑appetite (specially sweets due to induced hypoglycemia)	↓sperms + ↓testosterone ↓ovulation (not marked as in males)

C/P (followed) :

Psychological & neurological

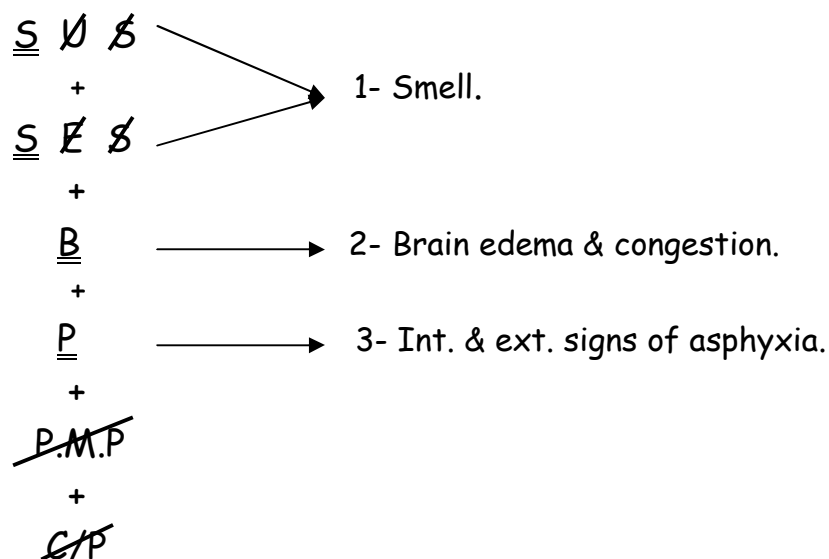
3- >250 mg:

1. Sexual Hallucination.
 2. Space & time disorientation.
 3. Traffic accidents.
- Impaired attention & concentration.

Cause of death:

- 1- Central asphyxia.
- 2- Car accidents.

P.M.P:



Treatment:

- 1- S & S → Care for respiration.
- 2- ECG → √√√
- 3- D & D & H → √√√
- 4- Local antidotes →
 - 1- Tannic acid
 - 2- Charcoal
 - 3- H₂O₂ & KMNO₂
- 5- Physiological antidote → Caffeine + Tea (strong)
(CNS stimulant)
Because the patient is nearly comatosed,

STRYCHNINE

(S)

1) Source: Strychnus nux vomica seed (Crushed powder)

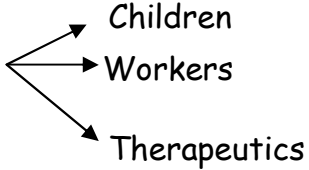
2) F.D: Thirty (30 mg)

3) F.P: ساعتين (2 hrs)

4) Uses: -Stomachic sense فاتح للشهية

- سيم فران

5) Condition of poisoning: -Accidental



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graph LR; A[Accidental] --> B[Children]; A --> C[Workers]; A --> D[Therapeutics];
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-Suicidal → X (Severe Pain)

-Homicidal → X (Severe Pain)

6) Investigations: الخوارج والتقطيع

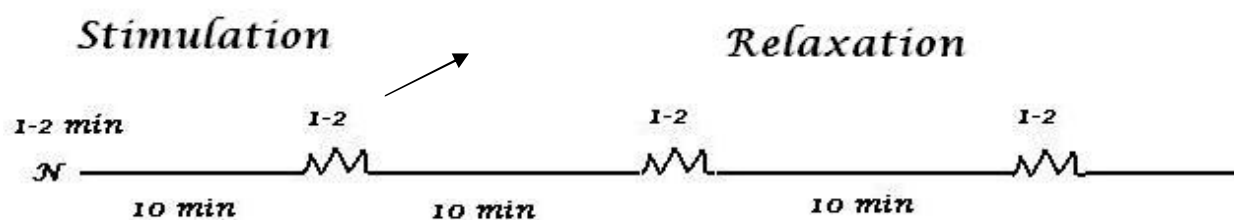
7) Action:

1-Spinal Cord → ↓ Synaptic resistance
(Glycine) قبل ناظر المحطة

2-Stimulus → Contraction of all muscles
(No reciprocal innervations)

3-Stimulation of CNS → 30%

8) Clinical Picture:



1- Spasm of Muscles → Face (Risus Sardonius)
 → Extensors of body
 → Flexors of U.L.

1- Severe Exhaustion → (2) Death

2- Sensory Stimulus → Contract Stimulus
 Stimulus أي

10 min of Rest في ال → Contraction

Imp: Opisthotonus Position

Resp. Ms. → Peripheral asphyxia
 → (1) Death

2- Sympathatic Stimulation

- Bl.Pr.
- Pulse
- Resp. + Mydriasis + Bulging
- Temp.

3- Suffer till end → Concious

9) P.M.P:

~~S/S~~ → 1-Powder or Crushed seeds

+

~~S/S~~

+

Brain → 2-Brain Edema & Congestion

+

Passages → 3-Int. & Ext. Signs of asphyxia

+

PM Picture → 4-Resist Putrefaction

5-Earlier Rigor Mortis (No ATP " Exhaustion of ATP)

+

~~C/P~~

10) D.D:

1) <u>Tetanus</u> 1-History of Wound 2-Bacterial → Cl. tetani 3-Death → Days 4-Trismus → Lock jaw 5-Gradual 6-In state of relaxation, the muscles are <u>Tonic</u>	2) <u>Epilepsy</u> 1-Loss of conscious 2-Bitten tongue + froth 3-Normal face not cyanosed as in strychnine + Rising 4-One attack only (Not Several)
3) <u>Tetany</u> → Carpopedal Reflex (↓↓ Ca) 1-+ve Trauseau Sign (جهاز الضغط) 2-+ve Chroslek (Facial → Tremors)	4) <u>Eclepsia</u> → Female Pregnant <u>Triad</u>: → ↑ Bl.Pr → Foot edema → Proteinurea
5) <u>Meningitis</u> 1-Neck rigidity 2-CSF examination	

11) TTT

A

Anaesthesia
(Ether inhalation 1st
Then IV anaesthesia)

B

Barbiturates

C

Calm of dark room

1- S. & S. → Care of Resp.

2- ECG → ✓ By Cuffed endotracheal tube

→ Because I give him Anaesthesia

3-Local antidote

- Charcoal
- KMnO_4 , H_2O_2
- Tannic Acid

4-D. & D. & H. → ✓

5-Physiological antidote →

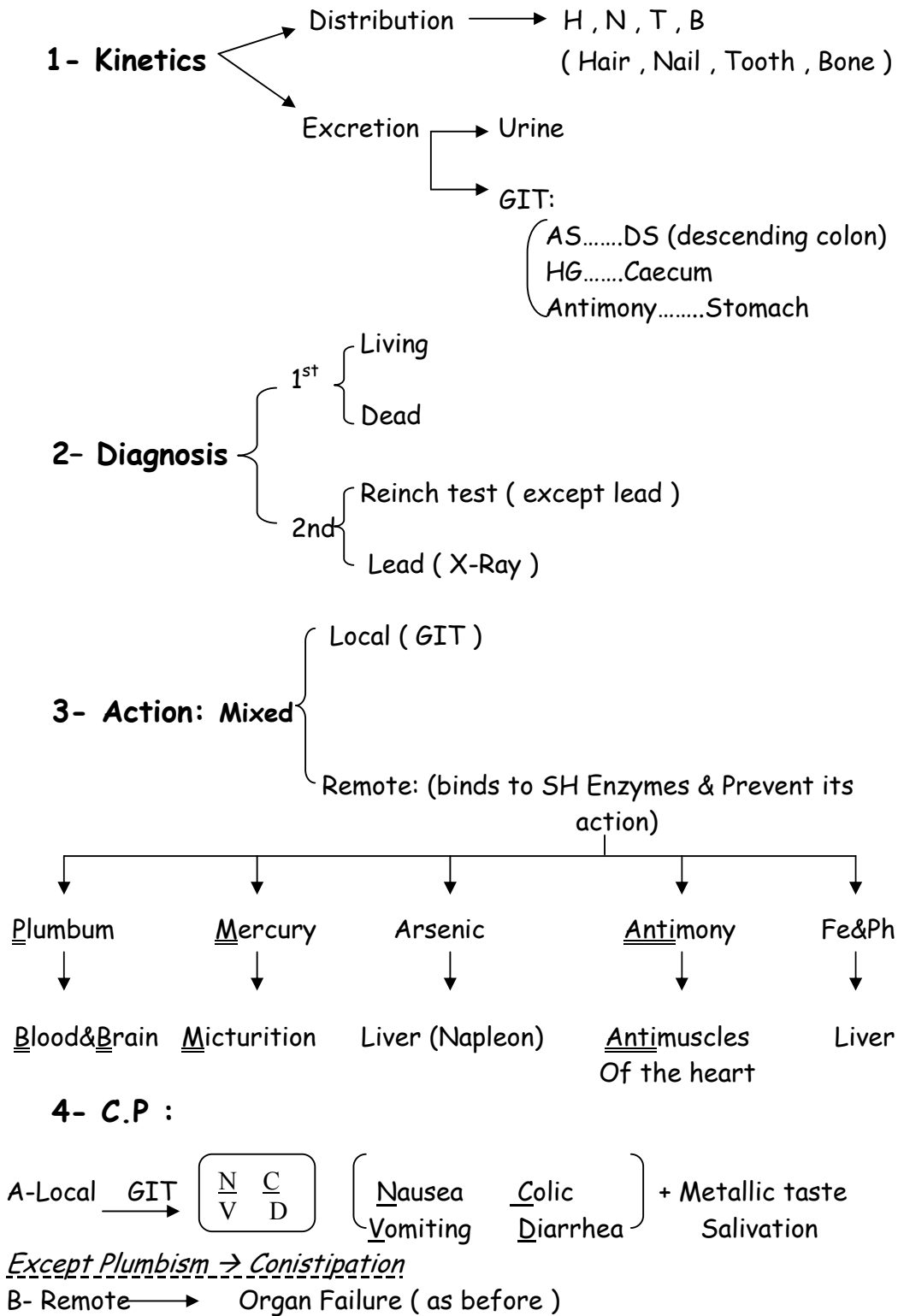
S
↓
Succinyl Choline
(10 mg)

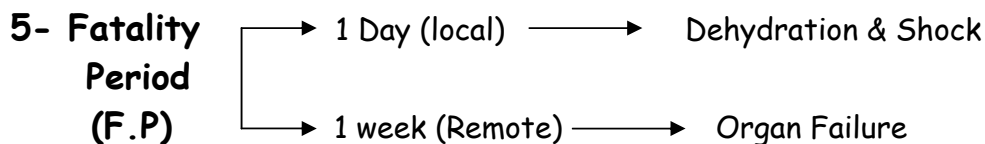
M
↓
Mephensine
(1mg)
Glycine

M
↓
MgSO₄ (10%)
↓
Black Motor End Plate

METALLIC POISONING

Scheme:-





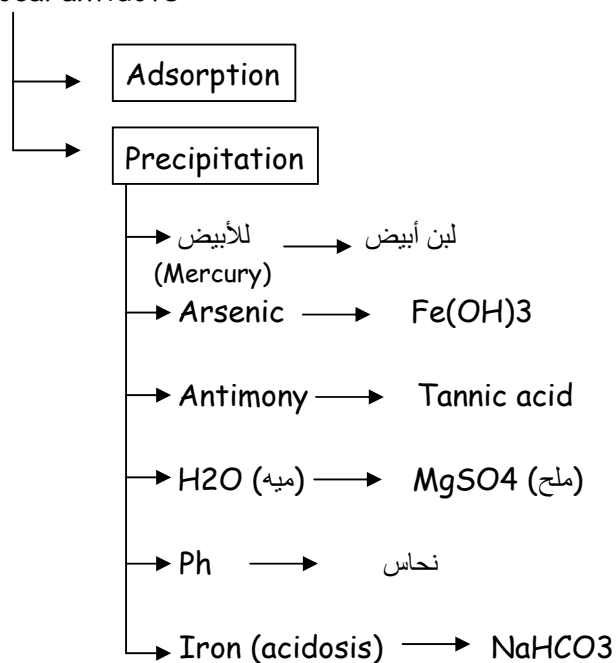
- 6- P.M.P** → superficial
- A- Ulcer + Intact mucosa in between
 - B- Resist & Delay putrefaction (due to dehydration & bactericidal effect of Metals)

- 7- Cause of Death:**
- A- Dehydration & Shock (1 Day)
 - B- Organ Failure (1 Week)

- 8- Treatment:**
- A- S&S
 - B- ECG
 - C- Local Antidote
 - D- D&D

- E- physiological antidote → Chelators
- 1- BAL
 - 2- EDTA
 - 3- Penicillamine
 - 4- Desferol

C- Local antidote:



Blood → Brain → Black offensive stool → Micturation → Mucus → ميه

	<u>Plum bum</u>	<u>Mercury</u>
<u>Kinetics:</u>	Distribution: H + N + T + B Ca ↑ Ca Vit. D Alkalies ↓ Ca Vit. D Acids Parathormon ↓ Deposition  M O B I L I Z E	Distribution: H + N + T + B Caecum (excreted)
<u>Diagnosis:</u>	Living X-Ray Intestine  Liver  Bone  >0.25 mg/dl in Urine	Living Reinch test  مدورة >100 mg/dl in Urine
<u>C.of Poisoning:</u> Accidental Homocidal Suicidal	- Occupational - Household - Environmental Rare by Insecticide	- Ingestion of soluble Salts overdose - Vaginal plugs Rare Ingestion of Corrosives
<u>F.P:</u> <u>Local</u> <u>Remote</u>	1 Day 1 Week → Brain 	1 Day 1 Week → Kidney 

<u>F.D:</u>	- TEL (2 drops) ' <u>T</u> wo' - Rest → 10 gm ' <u>T</u> en'	1 gm (<u>M</u> ercury → <u>M</u> ono)
<u>Sources:</u>	1- <i>Environmental:</i> → Air (exhaust fumes) → Food (flies) → H₂O (pipes) 2- <i>Industrial & household:</i> - <u>O</u>leate → <u>O</u>vum - <u>A</u>rsenic → <u>A</u>nts - <u>S</u>ubacetate → <u>S</u>.C Haematoma - <u>O</u>xides → <u>O</u>n iron (to prevent rust) - TEL (in petrol) → child (immature BBB) → Workers	<pre> graph TD Metals --> N1[Non toxic if ingested] Metals --> N2[Skin by injected] Metals --> N3[Lung by inhalation] Salts --> N2 Salts --> N3 Salts --> Organic Salts --> Inorganic Organic --> Diuretic Inorganic --> Mercuric Inorganic --> Mercurous Mercuric --> Chloride1[Chloride] Chloride1 --> Cleaning Chloride1 --> Fluminate Fluminate --> Firearm Firearm --> Cyanide Cyanide --> Cidal Mercurous --> Chloride2[Chloride] Chloride2 --> Calomel Calomel --> PinkDisease[Colon of children Pink Disease] PinkDisease --> S1[1- Pink extremities] PinkDisease --> S2[2- Painful] PinkDisease --> S3[3- BP ↑] PinkDisease --> S4[4- Bald alopecia] </pre>
<u>Uses:</u>	1- <u>B</u> ullets 2- <u>P</u> encils 3- <u>P</u> rinters 4- <u>P</u> ipes	1- Blood Pressure 2- Batteries 3- Lamps

<u>Action :</u>	Local : —→ (GIT) Remote : ↳ Brain ↳ Blood —→ haemolysis	Local: —→ GIT Remote: —→ Kidney
<u>C/P:</u> a) Local: b) Remote:	metallic taste ↑ M N V S C D —→ black & ↓ Offensive stool salivation + Dehydration & Shock 1) Brain ↓ Encephalopathy (all sympt. of mental deterioration) 2) Blood —→ Haemolysis ↓ R.F (as before)	M N V S C D —→ ↓ mucous + blood (Merconial dysentery) * Kidney Failure
<u>P.M.P:</u> S U S + S E S + B + P + P.M.	1) Superficial Ulcers X X X 2) Encephalopathy (Brain edema & Congestion) X 3) Resist & Delay Putrefaction	1) Ulcers ↳ Specially Caecum X X X X 3) Resist & Delay Putrefaction

<u>TTT:</u> 1) S&S 2) ECG 3) L.A 4) D&D 5) Physiological antidote	1) Care of shock 2) Care of dehydration 3) Care of CNS 4) Care of Kidney √ √ √ 1) Adsorp → Charcoal 2) <u>Precipitation</u> → Salt $MgSO_4$ √ √ Mobilization → followed by immobilization to allow The chelators to work efficiently √ √	1) Care of shock 2) Care of Kidney √ √ √ 1) Adsorption → Charcoal 2) Precipitation: الأبيض للأبيض بياض البياض <u>Not milk</u> → <u>Death</u> 3) Mercuric → Mercurous Na Formaldehyde Sulfoxalate
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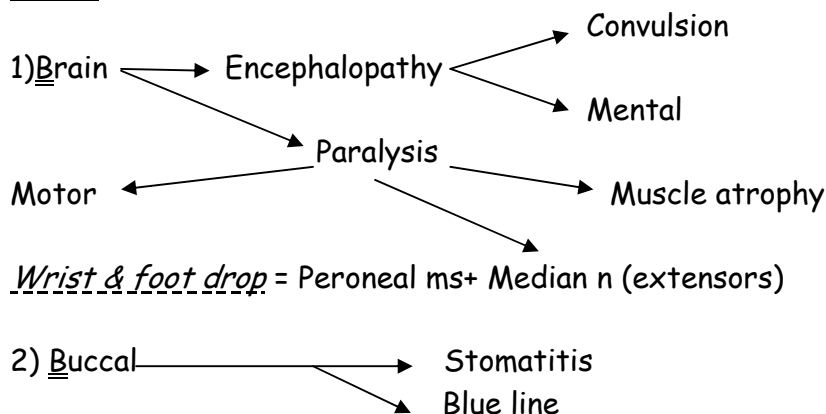
CHRONIC LEAD POISONING

6 BS → BODY ORGANS

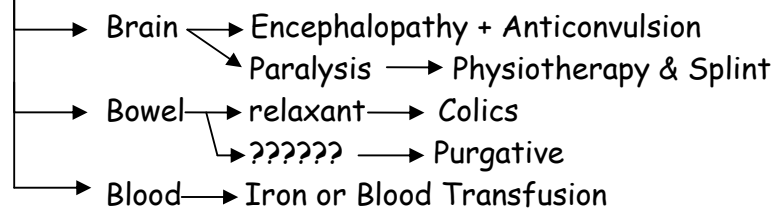
Plumbism = Chronic toxicity

- Purely motor neuritis:

C/P :



4) Symptomatic:



CHRONIC POISONING (MERCURY)

متسول ← Mercuralism

C/P:

1) Mercurialentis



2) GIT → Mercurial dysentery

→ Mucous + blood



→ Vomiting + Diarrhea

3) Renal failure → Olig + ABC : anuria

4) Oral → Salivation

Gingivitis

Grey line (Mercury)

Cancrum Oris ← Gangrenous

5) Skin → weeping dermatitis (oozing dermatitis)

6) Cerebellum → kinetic tremors

7) Psychic → shyness

→ loss of confidence

→ erythema

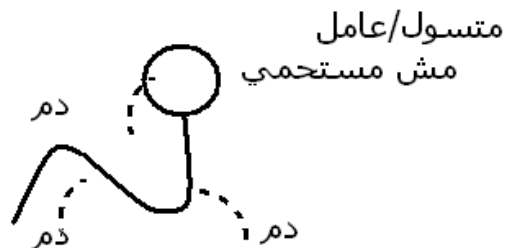
TTT:

0) Prophylactic

→ cloth

→ container

→ check up



- 1) Prevention
- 2) Physiological antidote
- 3) Symptomatic ttt:-
 - * psychological
 - * Nervous

- * BAL skin ointment
- * BAL eye drops

METALLIC POISONING

Anti muscle of heat
Anti mansonii &
Ampoules

Napolion ponapart + إرز

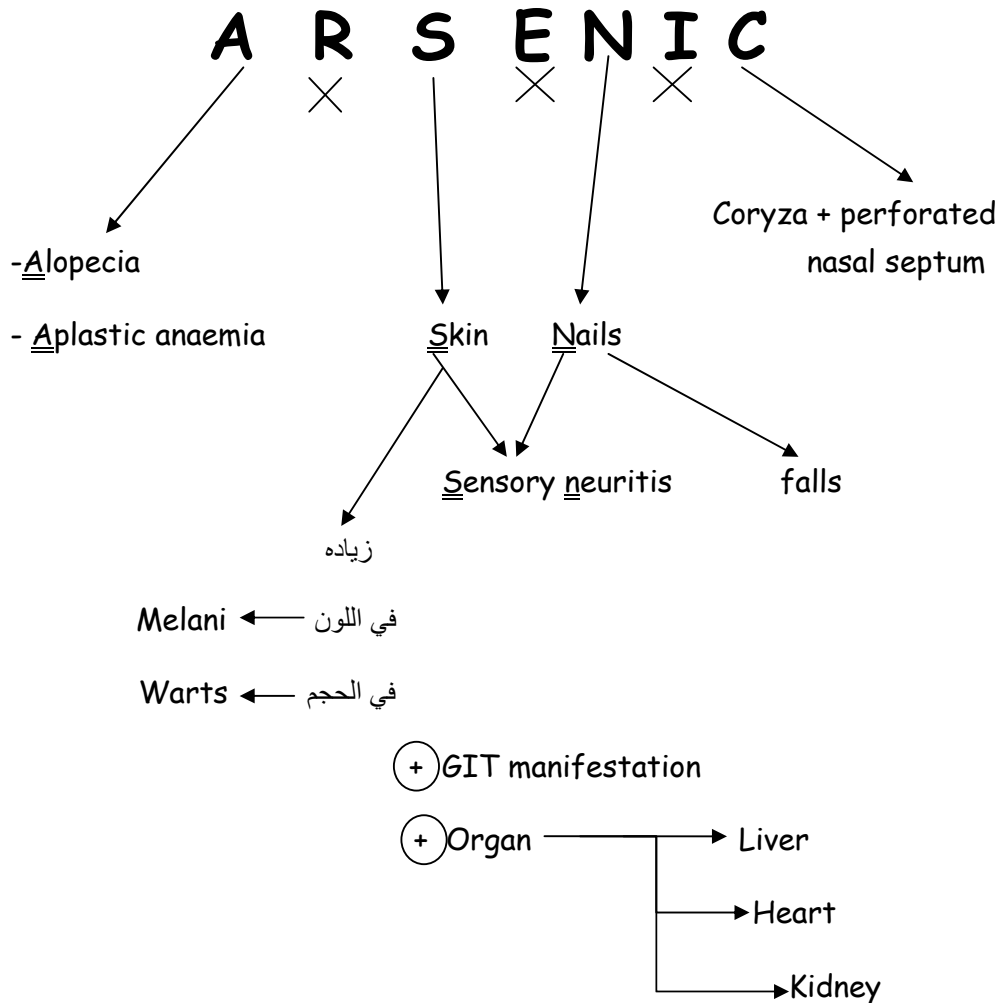
	<u>Arsenic</u>	<u>Antimony</u>
<u>Diagnosis:</u>	Reinch test اشكال هندسيه ◇ ◇ powder Amerphous	
<u>Kinetics:</u>	Ascending & descending colon	Stomach
<u>F.D:</u>	100 mg	100mg
<u>F.P:</u>	1 day → dehydration & shock 1 week → liver failure	1 day → dehydration & shock → Heart failure
<u>Source:</u>	1- الطيب → $As_2 S_3$ (yellow) 2- الشرير → $As_2 O_3$ (White) 3- Organic → Syphilis 4- Inorganic → salts → lead arsenate Insecticide ← → Cu arsenite	1- Antimony sulphide (كحل) 2- Antimony oxide (اكل) 3- Antimony chloride → Corrosive 4- Tartar emetic

	5) Arsenic gas +++ blood transf. + dialysis haemolysis ↓ renal failure	5-Stibine gas haemolysis RF CNS irritation
<u>USES:</u>	1- البيت glass ceramic Paint paper 2-Insecticide 3-war gases	1-Insecticide 2-War gases
<u>C. of Poisoning:</u> • Accidental • Suicidal • Homicidal	Household Occupational Rare <u>Common</u> <u>Advantages:</u> 1) Colics (gastroenteritis) 2) Color 3) Can escape (4hrs) 4) No Characteristic smell/odour <u>Disadvantage:</u> Detected after putrefaction In 'B, N, H'	Therapeutic overdosage ACC. Accumulation in organs hypersensitivity Industrial exposure Hom. } Rare Suic }

<u>Actions:</u>	1)Local: → GIT 2)Remote: → SH group enz Liver  Heart Kidney	GIT SH group enz Heart  Liver Kidney																		
<u>C/P:</u>	1)Local: (m) n V (s) C D → Rice watery stool ↓ D & S due to toxic capillarities ↙ stress of intestinal mucosa 2)Remote: → Liver Failure	1) Local The Same 2) Remote: → Heart Failure																		
<u>D.D:</u>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th><th>Arsenic</th><th>Cholera</th></tr> </thead> <tbody> <tr> <td>1)Toxic</td><td>√</td><td>X</td></tr> <tr> <td>2)Bacteria</td><td>X</td><td>√</td></tr> <tr> <td>3)Colics</td><td>√</td><td>X</td></tr> <tr> <td>4)Vomiting & Diarrhea</td><td>V.....D</td><td>D.....V</td></tr> <tr> <td>5)Temp</td><td>↓</td><td>↑</td></tr> </tbody> </table>		Arsenic	Cholera	1)Toxic	√	X	2)Bacteria	X	√	3)Colics	√	X	4)Vomiting & Diarrhea	V.....D	D.....V	5)Temp	↓	↑	
	Arsenic	Cholera																		
1)Toxic	√	X																		
2)Bacteria	X	√																		
3)Colics	√	X																		
4)Vomiting & Diarrhea	V.....D	D.....V																		
5)Temp	↓	↑																		
<u>P.M.P:</u>	SUS → Ulcer + SES + B +	SUS → 1) Ulcers + 2) SeS 3) Heart																		

	$\nearrow$ + P.M $\longrightarrow$ putrefaction + C/P $\longrightarrow$ congested liver Kidney Heart	C/P: Sometimes complications 8% toxic jaundice
<u>TTT:</u> 1) S & S 2) ECG 3) Local antidote 4) D & D 5) Physiological antidote	- Care of shock - Care of liver $\checkmark\checkmark$ 1) Charcoal (Adsorp) 2) $\text{Fe}(\text{OH})_3$ (percipt) $\checkmark\checkmark$ BAL DMSA EDTA	- Shock - Heart $\checkmark\checkmark$ Except antimony <u>Chloride</u> $\downarrow$ <u>Corrosive</u> 1) Tannic acid 2) Charcoal $\checkmark\checkmark$

CHRONIC ARSENIC



TTT:-

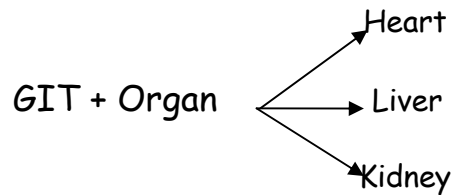
- 1) Prophylactic → clothes, containers
- 2) Prevention
- 3) Physiological antidote (BAL, etc...)
- 4) Symptomatic ttt → BAL eye drops & ointments

CHRONIC ANTIMONY



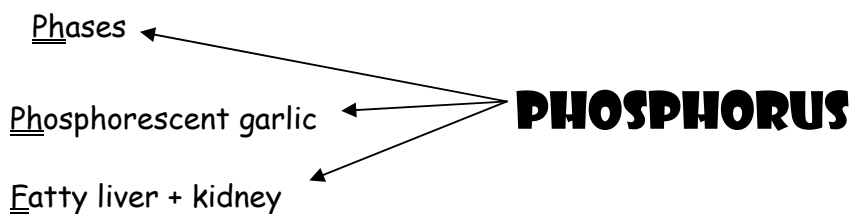
الفلاحين

(Pustules)



	Arsenic	Cholera
1) Toxic	√	×
2) Bacteria	×	√
3) Colics	√	×
4) Vomiting & diarrhea	Vomiting → diarrhea	Diarrhea → vomiting
5) Temperature	↓	↑

www.Medadteam.org



Ca

Source:- 1) الأصفر (Yellow) → Rat posion + Fertilizers

2) الأسود (Black) → Zinc phoshide → Rat poison

3) الأحمر (Red) → Matches

4) الشفاف (phosphene gas) → Melting

Kinetics:-

- Fat soluble
- Smell

Diagnosis:- (As before) (No Reinsch)

F.P → 1d → D & S

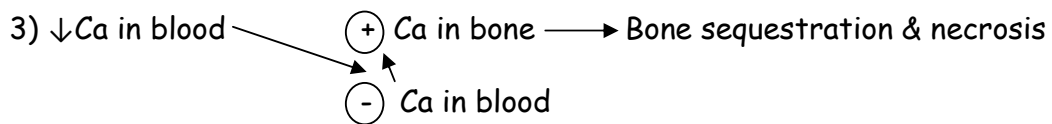
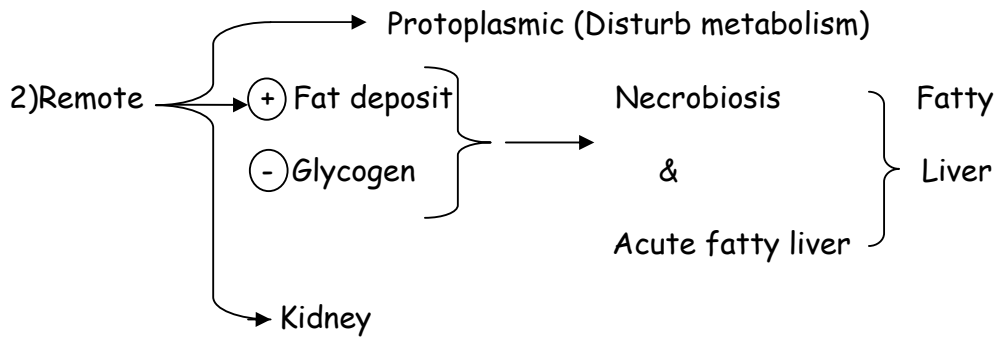
F.D → 1w 200mg/kg → liver & kidney

C.of poisoning:-

- Acc → Children
- Acc → workers
- Suic → ✓
- Homicidal → ✗ smell

Action:-

1) Local → GIT



C/P:-

1) Local:- (GIT)

(1ry phase)

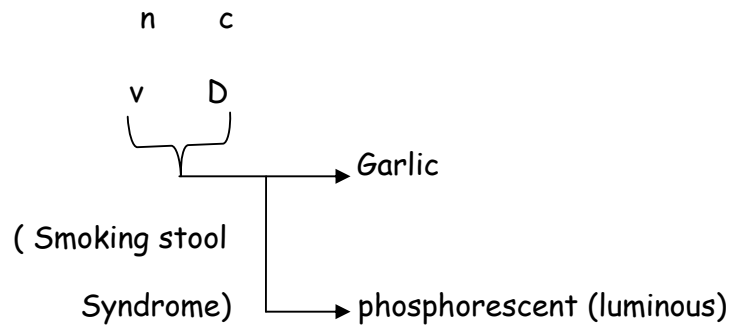
Apparent

Recovery

2) Remote (liver) →

(2ry phase) (Kidney) →

3) ↓Ca → Cramps & convulsions



P.M.P:

- Su~~S~~ 1)Smell
+ 2)Ulcer + luminous
Se~~S~~ 3)Resist putrefaction
+ 4)Fatty liver & kidney

~~β~~

+

~~β~~

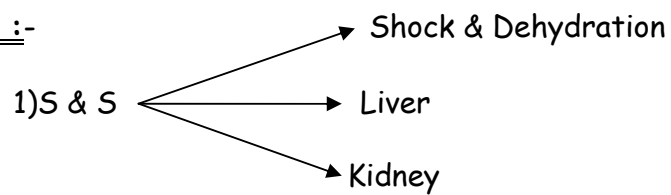
+

P.M

+

C/P

TTT :-



↑↑ 2)ECG → √√

↓↓ 3)L.A →

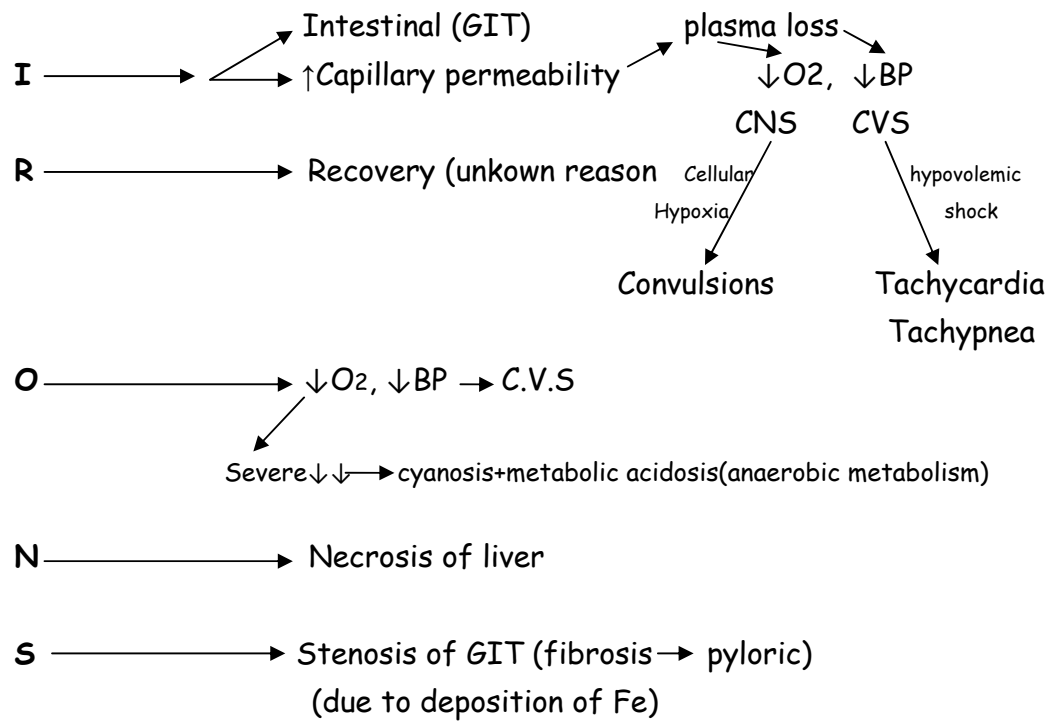
- 1)Charcoal
- 2)CuSo₄ (precipitate)
- 3)H₂O₂ (Oxidation) (O₂ عدو)
 - KMNO₄
 - phosphate

↑↑ 4)D&D

1) Physiological Antidote X NO Chelators ' Not True Metal'
→ Ca Gluconate 'Due to Ca Deficiency'

IRON

C/P:



Diagnosis:-

⊕ X-ray

F.D: → 200mg/kg

F.P: → 1d
 1w → liver failure

Actions:

- 1) Local
- 2) Remote
- 3) Capillary permeability

C.of poisoning:-

Acc → Mainly children
→ Therapeutic (predisposed)
Suic → √√
Homicidal → XX

P.M.P:-

~~SUS~~

1)Ulcers

+

2)Tablets

~~SES~~

+

B

3)Brain

+

~~P~~

+

P.M.P

4)Resist putrefaction

+

C/P

5)Liver (necrosis)

TTT:-

1)S & S → Shock
→ Liver

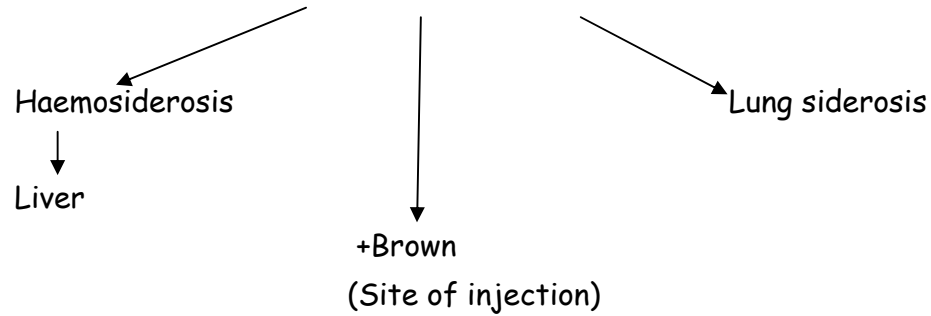
2)ECG

3)LA → NaHCO₃ charcoal

4)D & D √√

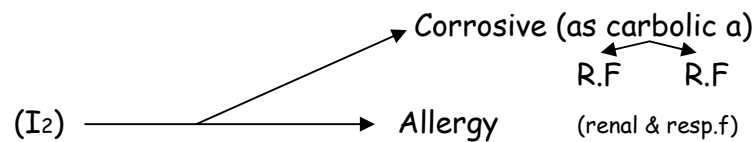
5) Physiological Antidote → Desferol
(until wine rose color of urine disappear)

CHRONIC IRON TOXICITY



(As carbolic a.
But without
Gastic lavage)

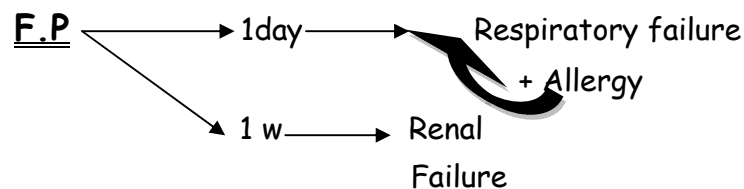
IODINE



F.d → 2gm

Sources & uses → Antiseptic

Diagnosis → خوارج وتقاطيع



Action:-

1) Local: $\longrightarrow$ Corrosive (Coagulative necrosis)

Stomach Skin

2) Remote $\longrightarrow$ Renal failure

3) Allergy $\longrightarrow$ Respiratory failure

C/P:-

1) Local:- GIT $\longrightarrow$

N	V
Brownish	
corrosions	

C D $\longrightarrow$ D&S

2)Remote:- Brown urine

3) Allergy $\longrightarrow$ Angioneurotic edema
(pulmonary edema)

P.M.P:-

Sus	1)Ulcers
+	2)Eschars
Ses	3)Renal failure
+	4)Respiratory Failure

B

+

P

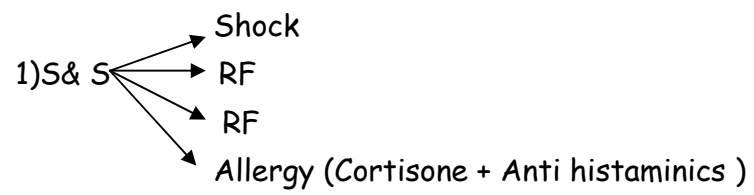
+

P.M.P

+

C/p

TTT:-



2) ECG X → NEVER as it is A Corrosive

3) L.A → Demulcent

4) D & D → √√

5) Physiological Antidote

Cytochrome oxidase

5Cs Coma

VOLATILE

- Na-nitro prusside

ttt of HTN

CYANIDE (HYDROCYAANIC ACID) (prussic acid)

Source: A) زراعة
اكل وقتل

Cyanogenic plants

Cidal

B) صناعة

Cameras

Graphic arts

Metallurgy

Kinetics:

Smell: (bitter almond oil)

D.D:

Red Asphyxia

CN

CO

Cold

C. of Poisoning:

Acc.

child

workers

Suic.

Spies

Lab. workers

Homic.

X (smell)

Execution → USA

F.D.:

- Acid & drop.

- Salt 300 mg.

F.P.: 1 min

Action:

1) Cytochrome oxidaze enz.

↓
Anoxia (Hisotoxic)

↓
Asphyxia (Red)

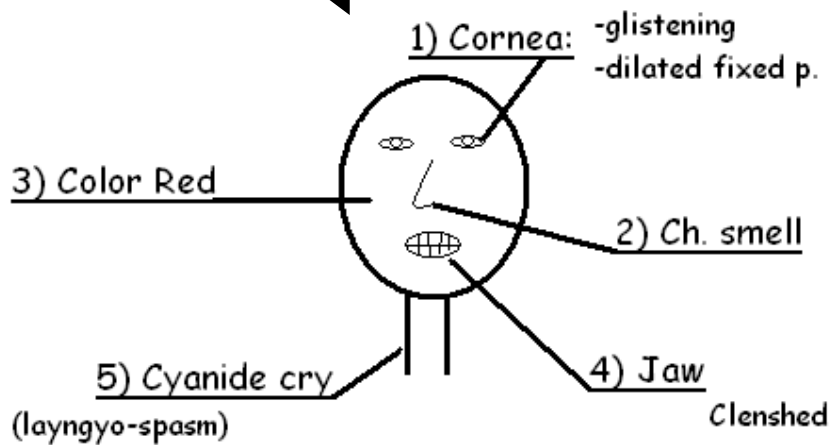
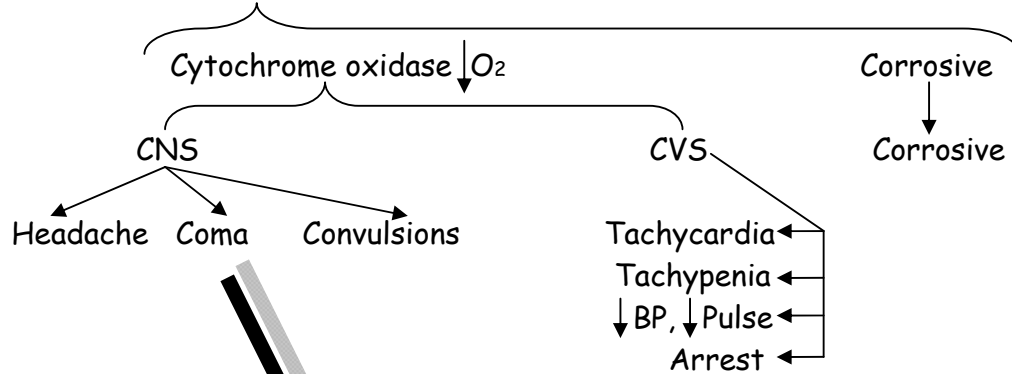
↓
Acidosis (Anaerobic)

2) Corrosives (GIT)

C/P:

1) Large dose → death

2) Small dose



P.M.P:

- 1) Smell.
- 2) Ulcers (slats).
- 3) Brain oedema & congestion.
- 4) Int. & Ext. signs of Asphyxia (Except blue → Red)

TTT: ***0) Physiological antidote.

- 1) S&S → Care of resp.
- 2) ECG ✓
- 3) LA → H_2O_2 or $KMnO_4$ (Oxidation)*
- 4) D&D&H ✓
- 5) Phys. A → ✓✓ 1/2 dose



NT

Nitrite thiosulfate

Kelo

cyanor

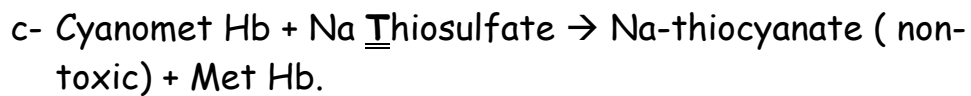
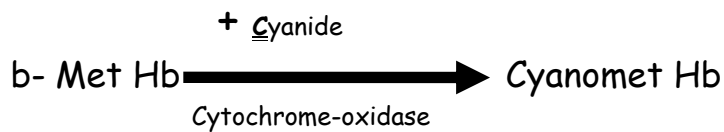
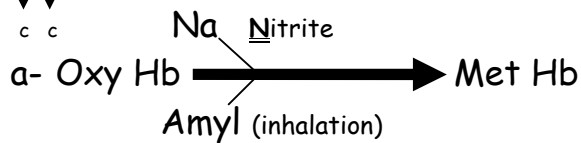
CT

cobalamine
thiosulphate

1) **NT**

Nitrite thiosulfate

↓
c c



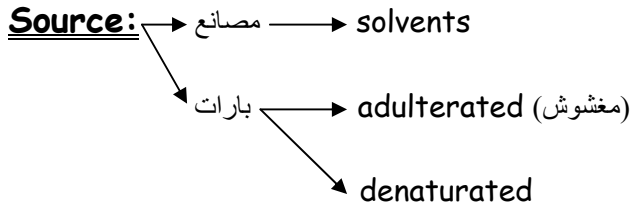
2) Dicobalt EDTA Kelacyanor

METHANOL

MICC

(Wood alcohol)

→ Because it's derived from wood

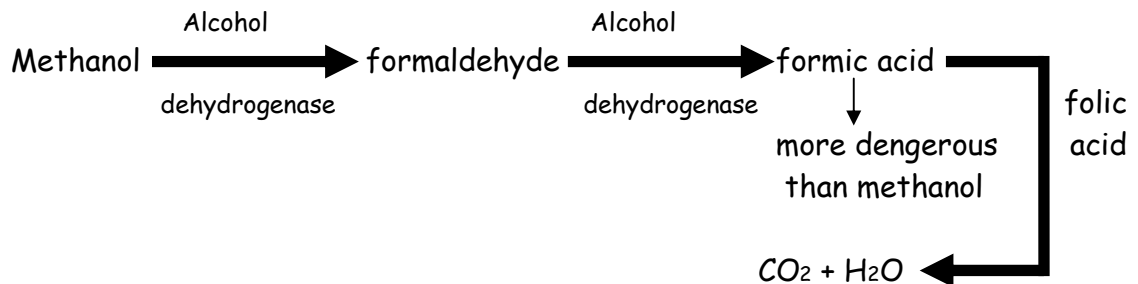


Uses:

- In factories.
- Unfit for drinking

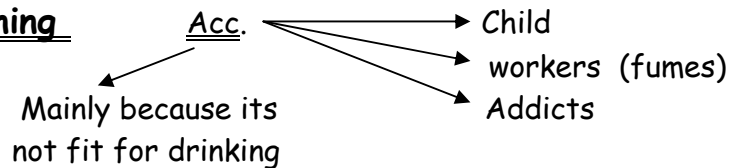
Kinetics:

- Absorb.
 - GIT 5%
 - Lung 5%
 - Skin
- Distribution: organs with H₂O content + Optic nerve
- Metab. & Excretion → 90% liver, slow excretion → cummulation effect



- 10% excretion as it is
 - 5% mouth
 - 5% urine

C. of poisoning

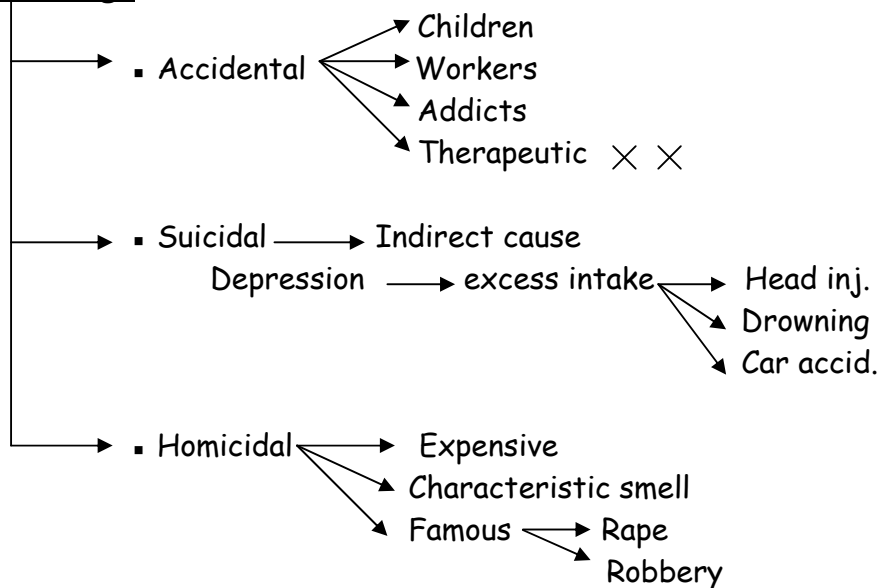


ETHANOL → EICC

D.D: Atropine

Diagnosis: Breath Analyzer or Drunkometer

C. of poisoning:



Sources: Produced → fermentation of sugar by yeast → concentrated by distillation.

Uses: Hospitals & industry → Antiseptic
House → Cologne
Bars → Beverages

F.D: 800 ml

F.P: 10 hrs.

Action:

Local	Systemic
Skin → cooling M.M → irritation <u>** Toxic dose**</u> 1- CNS depression 2- Acidosis 3- NO Eye Manifestations	ينيم → ↓CNS يفتح الشهية → ↑secretion of GIT يدر البول → ↓ADH يدفى → ↑cut. blood flow ↓temp → ↑sweat V.D → evaporation

C/P:

1- <u>E</u> xcitation	0.5-1.5 mg/ml	frontal lobe
2- <u>I</u> ncoordination	1.5-3 mg/ml	→ parietal → occipital → cerebellum
3- <u>C</u> onvulsion & narcosis	3-5 mg/dl	✓✓
4- <u>C</u> oma	> 5 mg/dl	medulla

S & S

- 1- ◇ Feel happy (Euphoria).
 - ◇ Fool behaviour (sexual crimes).
 - ◇ Feeble reaction time.
- 2- ◇ Can't stand (ataxia) staggering.
 - ◇ Can't see (diplopia).
 - ◇ Can't speak
 - hiccough
 - vomiting
 - tremors
 - slurred speech
- 3- ◇ Convulsion ◇ Hypoglycemia
 - ◇ Conjugate eye deviation ◇ Hypothermia
- 4- Coma & death (central asphyxia)
 - - Smell
 - ** - Sign (Mcewen's)

PMP:

- 1- Smell.
- 2- Stomach congestion & irritation.
- 3- Brain oedema & congestion.
- 4- Int. & ext. signs of asphyxia.
- 5- Hypostasis → blue
Flushed

TTT:

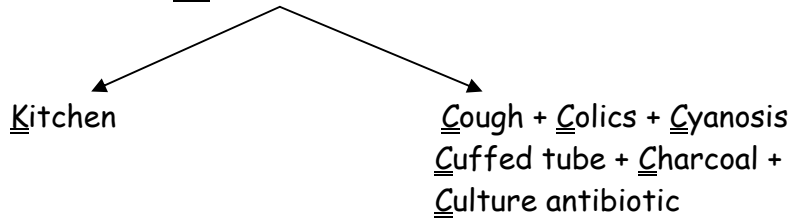
- Care of respiration
- ECG
- NaHCO_3 (acidosis)
- D & D
- Vit. B₆ (pyridoxine)
+ Alcohol metabolism

I.V NaHCO_3 for Acidosis.

****** BICARBONATE**

Brain edema }
↓ Bl. Glucose } Glucose or Mannitol "Osmotic Agent"

KEROSENE

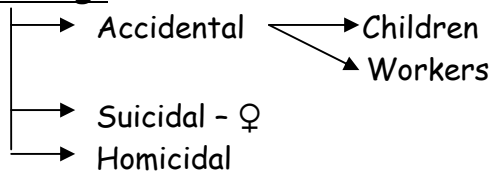


Source: Petrolleum.

Uses: Fuel, solvent (factors).

Diagnosis: X-ray chest.

Condition of poisoning:



F.D: 20 ml

F.P: 1 day central asphyxia
➤ 1 day chemical pneumonia

Action	Clinical picture
1- Resp. tract → chem. Pneumonia(asp) bact. pneumonia	Cough & dyspnea
2- GIT irritation.	Nausea, vomiting, colic & diarrhea.
3- CNS depression	Coma, Cyanosis (CA)

PMP:

- Smell
- Stomach congestion
- Brain edema
- Int. & ext. signs of asphyxia
- Lung consolidated patches

TTT:

- Care of respiration
- Antibiotic after culture & sensitivity
- No emesis
- Cuffed endotracheal
- Charcoal
- D & D
- No physiological antidote

S&S

ECG

LA

D&D

Phys.Antidote

TOXIC GASES

CARBON MONOXIDE

- **Source** : $C + O \rightarrow CO$

1)Charcoal

2)Car fumes

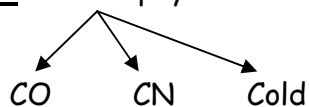
3)Coal mines

4)Cigarettes

5)Fire

- **Kinetics** : silent killer (odourless / colorless / smokeless)

- **D.D.** : Red asphyxia



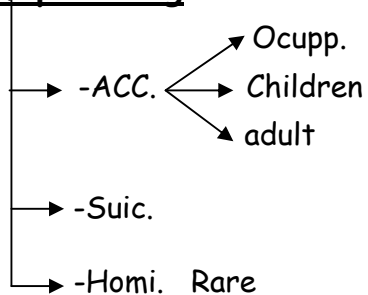
- **Diag.** : Spectroscope + Gas chromatography

-Dilution test

-kunkels test

-Infra red analysis

- **C.of poisoning** :



- F.D. : 0.1 % in air → 50 % CoHb

- F.P. : 2 hrs.

- Action :

1) Co + Hb (300)

2) ⊖ association ⊖ dissociation (shift to the left)

Red Asphyxia
↓
Anaemic Anoxia

- C.P. :

Conc.	Key word	S&S
0-10 %		
20 %	Two systems	• CNS → headache • CVS → Dyspnea (severe exercise)
30 %	Three Systems	• CNS → throbbing headache • CVS → Dyspnea (more) • Muscles >>> weakness
40 %	Four systems Fail to escape	• CNS → more & more • CVS → dyspnea • Muscles → incoordination • GIT → vomiting
50 %	Flaring of symptoms +	• Shock
70 %	Starting death	• Convulsions/coma/cheynestokes resp.
>70 %	Immediate death	

- **Complications :**

Brain	}	Affected
Heart		
Kidney		Necrosis
Liver		
Muscles		Degeneration

- **Pm. Pic. :**

- 1) brain oedema & congestion
- 2) int. & ext. signs of asphyxia (blue→red)
- 3) lung , brain & heart complication

- **TTT.** NO SCHEME (GAS)

0) Prophylaxis (ventil.) (MA.C) or (عصافير الكناريا)

- 1) Bed Rest
 - 2) Blanket
- } ↓ O₂ to ms.

Phys.

antidote.*

- 3) Hyper baric O₂
 - 1-fresh air
 - 2-100% O₂
 - 3- hyper baric O₂

4) BL. Transfusion

5) Mannitol (brain oedema)

6) Helthion

ORAL

Carbon Dioxide → small dose → ↑ RC

***Cyanosis (CNS ↓↓↓)

Source : factories (soft drinks) & fire

Action : Simple asphyxia

CHAPTER 1:

O.P. (Organo-phosphorus)

INSECTICIDE

O.A (Opposite Atropine)

1 - Source & uses:

→ Parathion
→ Insecticides

2 - Kinetics:

-Parathion → Paroxone (Toxic).
-Smell → Garlic ربحة الثوم

3 - D.D.

→ 3 C
→ Coma Cyanosis Constricted pupil

1. O.P
2. Morphine.
3. Carbolic Acid.
4. Pontine Hge.

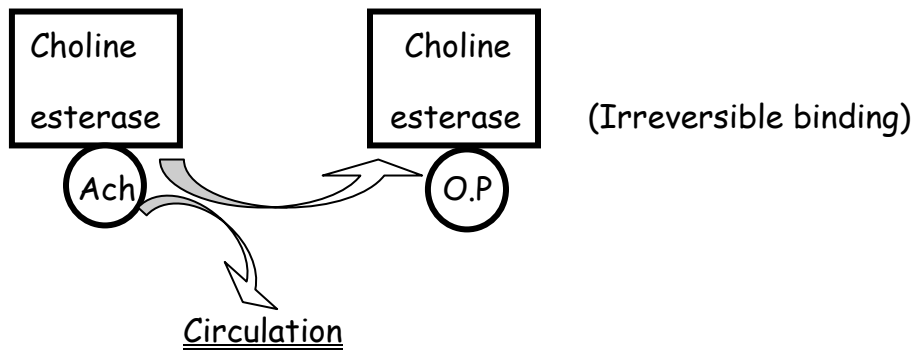
4 - C. of poisons:

→ Acc → Children
→ Acc → Workers
→ Acc → Feed
→ Suicidal → ✓
→ Homicidal → X (Garlic smell)

5 - F.P.: Parathion
 Pair hours

6 - F.D.: Pair x 10 = 20 mg

7- Action:



Acetylated Enz.

Phosphorylated Enz.

8- C/P:

1. Central: ————— ↑ : ↓

2. Nicotinic: ————— N-M Junction

↓
↑ : ↓
= Skeletal ms.

↑ Secretion of bronchi
↑ Salivation
↑ Sweat

3. Muscarinic: ————— Multiple glands ————— S L U D ————— Defecation

syndrome



P.P.P

↓
Muscles (smooth ms.)



← Broncho spasm



← Bowel



← Bladder

9- Cause of death:

Asphyxia

- 1. Central asphyxia.
- 2. Peripheral asphyxia.
- 3. Bronchospasm & Secretion of bronchi (Mascarinic).

10- Diagnosis:

- 1. بول → P.N.P. (Para nitro phenol)
- 2. دم → Choline esterase < 30%

11- Post-mortem picture:

- 1. Garlic smell $\sqrt{SUS}$
+
- 2. Brain Edema & congestion $\sqrt{SeS}$
+
- 3. Internal & External
Signs of asphyxia $\sqrt{B}$
+ $\sqrt{P}$
Pulmonary +
Edema $\sqrt{P}$
- 4. Resist Putrefaction +
~~C/P~~

12- TTT:

0. Prophylactic
- Clean
 - Clothes
 - Containers
 - Cholinesterase (Period examination of level in blood)

1. Care of respiration ✓

2. ECG ✓✓✓

3. L.A. → H₂O₂ / Charcoal
Oxidizing
agent

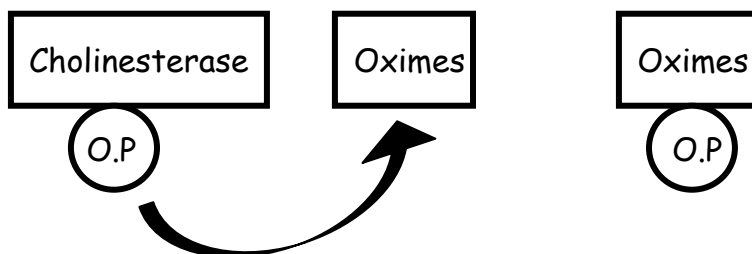
4. D.D ✓✓

5. Physiological Antidote:

a. Atropine → 1-2mg/15 min
→ Except nicotine
→ Central + Mascarinic action only

b. Oximes → 1gm /I.V.
Action: reactivate the enzyme

Should be taken
Early before ageing
Of enzyme



Types:

- PAM → Peripheral & Nicotinic
- DAM
- Obidoxime

More effective & Better

CARBAMATES —————→ Baygon (typically similar to O.P except)

1. Phosphorylation ? → No
 2. Prolonged action? → No (Because it's reversible)
 3. Potent? → No (
 - 1) Reversible effect on Enz. Cholinesterase.
 - 2) Oxime & Carbamate forms a bad compound
 4. PAM & DAM? → No
 5. Pass B.B.B ! → No !!
-

1. CNS + CVS
2. Cholemia + Uremia
3. Cancer + Cutaneous inflammation

CHLORINATED HYDROCARBONS

O.C (organo-choline)

Action	C/P
1. CNS: ↑ then ↓	√
2. CVS (arrhythmia)	V.F.
3. Cholemia (liver failure)	√
4. Uremia (Renal failure)	√
5. Cancer	√ (Particularly Hepatoma)

P.M.P

1) Asphyxia
(External & internal signs)

~~S~~ ~~U~~ ~~S~~
+

2) Brain edema

~~S~~ ~~E~~ ~~S~~
+

3) Liver

√ B
+

4) Kidney

√ P

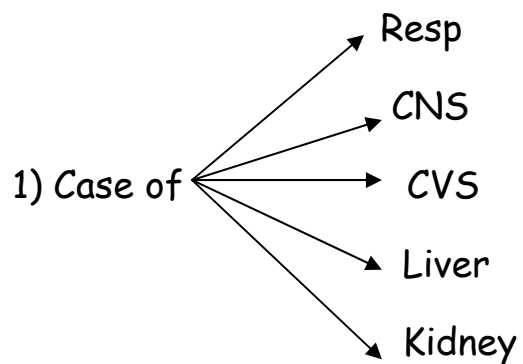
+

√ P

+

√ C/P

TTT:



2) ECG

3) L.A

4) D & D

5) Physiological antidote X NO!!

SYNTHETIC DRUGS

ASPIRIN

- Source: Salicylic acid

- Uses:

1) Analgesic

2) Anti- rheumatic

3) Anti-inflammatory

↓ P.G

↑ Cortisone

- Diagnosis

X-ray



(Aspirin cake)

- F.D. 1 day

Conditions of poisoning

Mainly ACC

- Child
- Therapeutic
- Hypersensitivity

Action & C/P

Aspirin

- Abdominal pain (ulcer)
- Arterial bleeding
- Allergy
- A.T.N (Acute Tubular Necrosis)
 - (R.F) → cause of death
- Aural (ear)
- Acid-base balance
- Agitations (CNS ↑ : ↓)
 - Respiratory failure

Action	C/P
1) GIT	N C → Ulcers V D → Bleeding
2) (-) Platelet aggregation (-) Prothrombin synthesis	- Bleeding
3) Allergy	- Rash & urticaria
4) R.F	→ - √√
5) Ear	- Tinnitus / vertigo
6) CNS ↑ : ↓	→ - √√
7) Acid-base balance	1) ↑ Resp. <u>hyperventilation</u> → Respiratory alkalosis (central action) 2) <u>PH</u> → <u>Neutral</u> (Kidney) 3) Metabolic acidosis → Kidney → Kid of Salicylic Acid X <u>Kreb's</u> cycle

* For MCQ actions & C/P are classified into:

Mild "Salicylism"	Moderate	Severe
-Ear -Abdomen	- <u>Dehydration</u> 1) hyperventilation 2) Vomiting 3) Secreting	-All the remaining points

P.M.P:

1) Ulcers

~~SUS~~
+
~~SES~~

2) Tablets

+

3) Brain edema

~~B~~

+

4) Internal & External
Signs of asphyxia

~~P~~

+

+

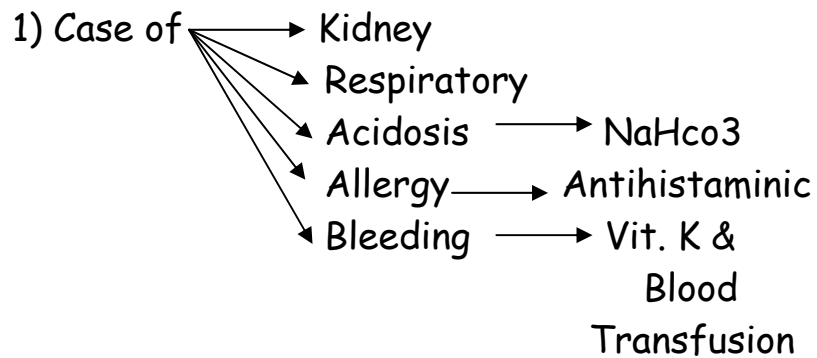
Pulmonary edema

P

5) Renal tubular necrosis

R

Ttt:



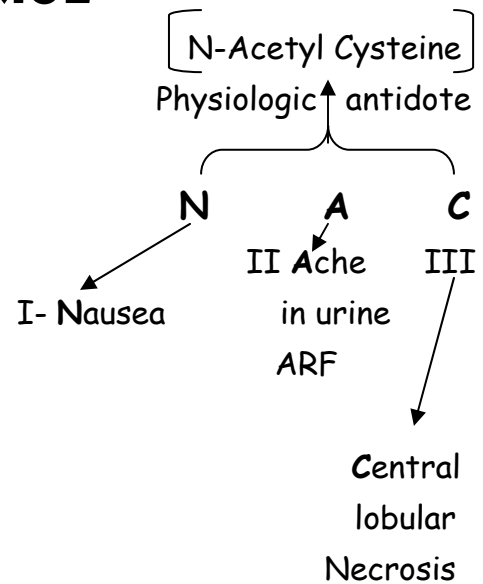
2) ECG

3) L.A → NaHco₃

4) D & D → Forced alkaline diuresis
(Done to anything that causes acidosis)

5) Physiological antidote → No!!

PARACETAMOL



1) Source → synthetic (Aniline)

2) F.d → 10/10gm

3) F.p → Few days

4) C.of poisoning → Acc → Therapeutic
 → Suic → Child
 → Rare

5) Kinetic: - Paracetamol → SH sulphate glucouronide → Non-Toxic

↓

Toxic → (NAPQI)

↓

SH Glutathione → Mercapturic Acid (Non-toxic)

↓

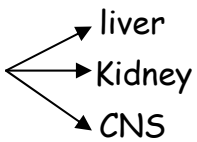
When there's absence of SH → Centri-Lobular Necrosis

<u>Action</u>	<u>C/P</u>
1)GIT	I- n c V d
2)Liver Failure	II- → Pain in lt.hypochondrium → ↓ Urine output
3)R.F	III- → Hepatic failure (as before) → ARF (as before)

P.M.P

- 1)Congestion (intestinal ulcer) + ~~SUS~~
- 2)Tablets ~~SeS~~
- 3)Brain edema +
√B
- 4)liver (centri-lobular necrosis) X P +
- 5)Kidney failure X P +
√ C/p

Treatment:

1) S&S → care for 

2) E.C.G √√√

3) L.A → Charcoal

4) D&D → √

5) Physiological antidote → N-acetyl cysteine (mucolytic)

3 letters → 3 days


NAC

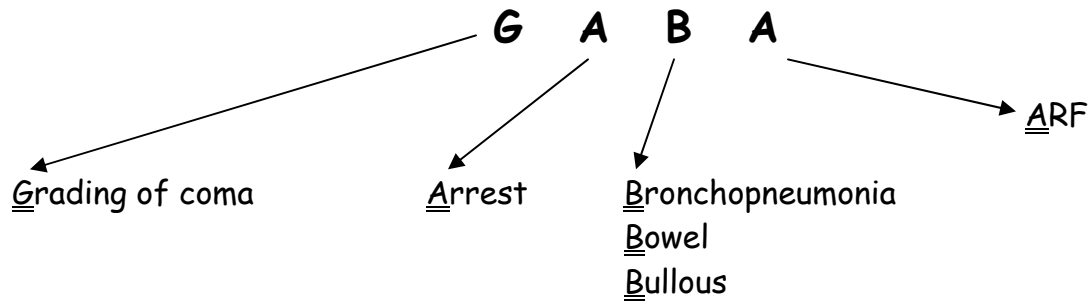
1) Dose → 140mg/kg loading dose → 7hrs
For 3 days 70mg/kg/4hrs → 14hrs

For 72 hrs

(after that death from
centrilobular necrosis)

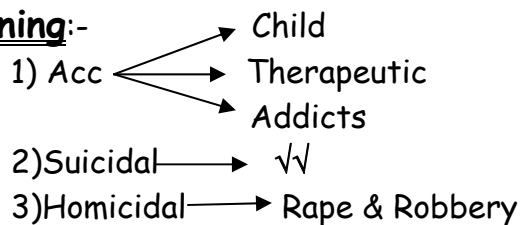
2) Action → ↑ SH (for sulphate & glutathione)

BARBITURATES

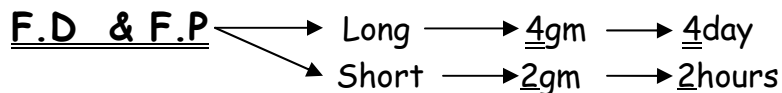
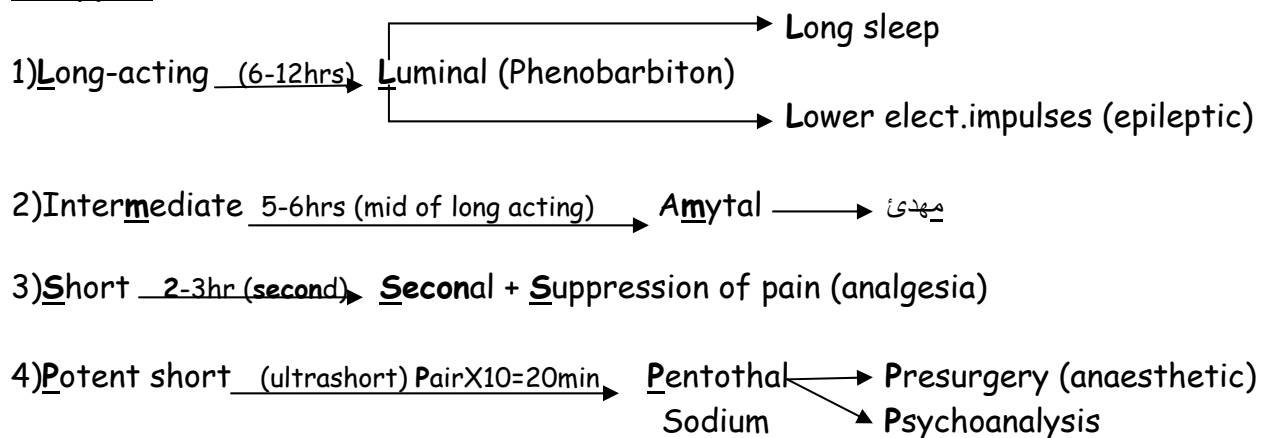


1) Source:- → Barbiturates

2) C. of poisoning:-

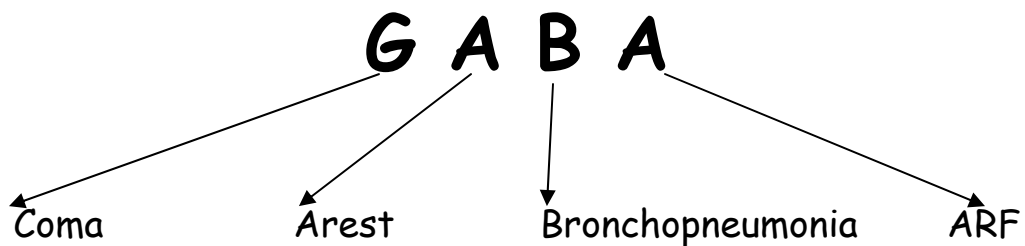


3) Types:



<u>Action</u>	<u>C/P</u>
1)CNS ↓↓	Coma, Cyanosis, Central asphyxia ↓ *Shock *Muscle hypotonia *Dilated reactive pupil
2)CVS → ↓ ↙ ↘ - VMC - Myocardium - Vascular ms tone	↓BP, ↓Pulse :- Arrest
3)Lung	Hypostatic pneumonia
4)Skin	Bullous
5)Bowel	Constipation & urine retention
6)ARF	√√√

Cause of death:



P.M.P:

~~SUS~~

1-Tablets +

2-Brain ~~SES~~

Oedema +

&congestion B

3-Asphyxia +

(Int& Ext signs) P

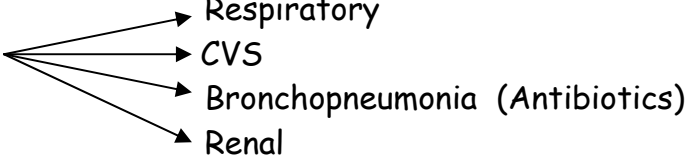
4-Pnumonia +

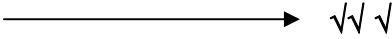
5-Kideny P.M

+

6-Blisters C/P

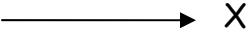
Treatment:-

1) S & S 

2)ECG  √√√

3)L.A  Charcoal
NaHCo3

4)D & D  Forced Alkaline Diuresis (Any acidic drug)

5)Physiological antidote  X

AMPHETAMINE

→ Adrenaline

→ Alkaline

Forced acidic diuresis

1)Source

Synthetic (ephedrine)

2)Uses

a) Anorexia → Anorexiant

b) Dexidrine → Depression

c) Retaline → Rise up (Analeptics)

d) Benzidine → Bl. vessels constrictor

e) Hyperkinesis (ADHD)

C. of poisoning:

1) Accid → Therapeutic
→ Child
→ Addicts

2) Suic

Actions :

↑ CNS → ↓ MAO I.
→ ↑ release & ↓ uptake

C/P :

1) CNS ↑↑↑

2) CVS ↑↑↑

3) Resp. ↑↑↑

4) Muscles (Movement) → Hyperthermia

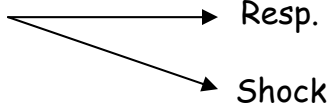
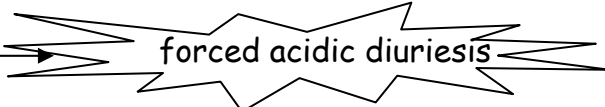
Cause of death :

- 1) Resp. failure
- 2) C.V.F (cardiac arrest)

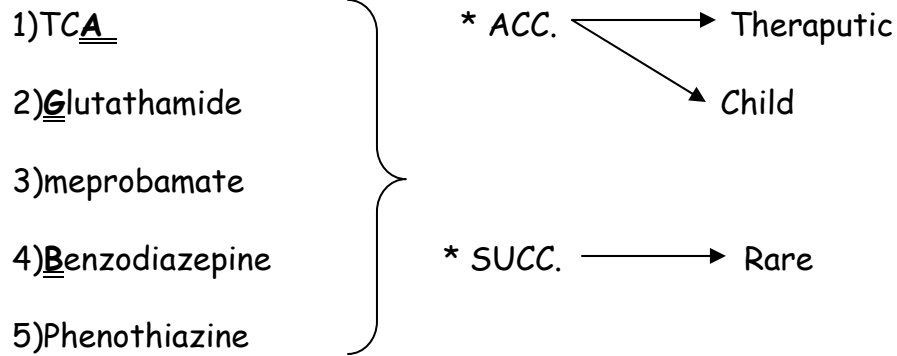
P.M.P :

- 1) Tablets $\cancel{S} \cancel{U} S$
+
- 2) Maxtone Forte $\cancel{S} \cancel{E} S$
(site of inj) +
- 3) brain edema & congestion $\checkmark B$
+
- 4) Asphyxia (int.&ext. signs) $\checkmark P$
P.M + C/P

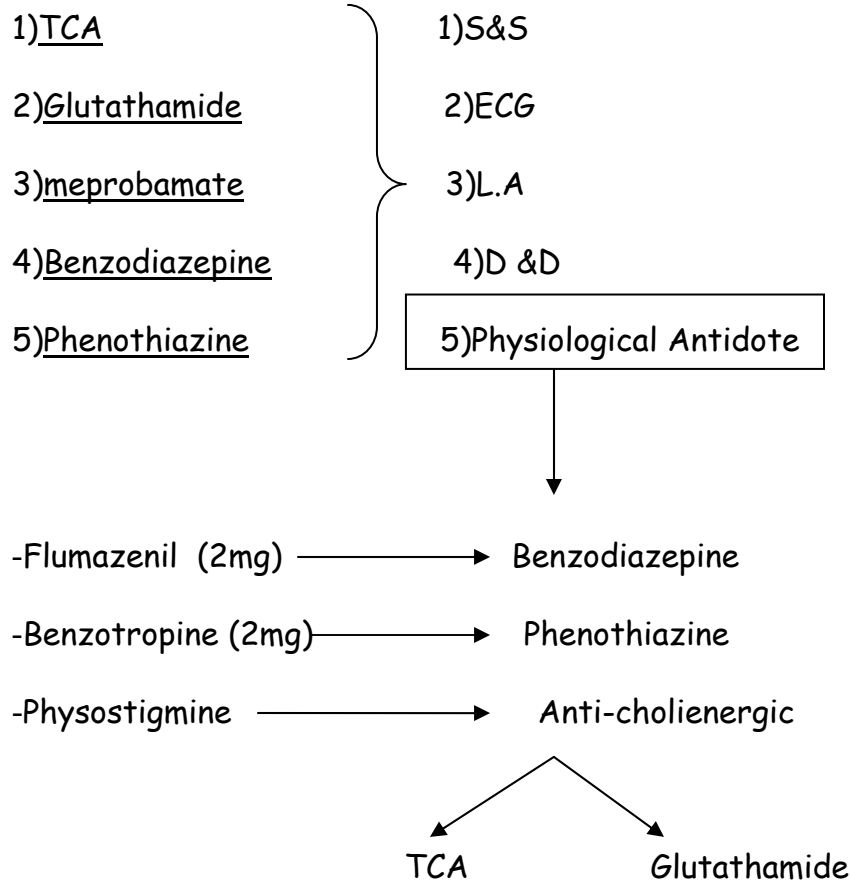
TTT:

- 1) S&S 
 - Resp.
 - Shock
- 2) ECG $\checkmark \checkmark$
- 3) L.A 
 - Charcoal
- 4) D & D 
 - forced acidic diuresis
- 5) Physiological Antidote 
 - Phentolamine
 - Diazepam & chlorpromazine

C. of Poisoning :



TTT.:



CNS ↓↓	CVS ↓↓	Allergic (A & B)	Anticholinergic (A & G)	Extra pyramidal
All cause ↓ except TCA cause stimulation then depression	All cause Arrhythmia & CV↓↓ except meprobamate have no arrhythmia but cause pulmonary edema	Rash Articaria <u>TCA</u> <u>Benzodiazepine</u>	e.g atropine (dry mouth, dry skin, DF pupil, urine constipation. <u>TCA</u> <u>Glutathamide</u>	Neck rigidity & tremors Parkinsonism Phenothiazine

ADDICTION

OPIUM

- 1- **Condition of addiction:**
 - Medical
 - Non -Medical
 - Congenital Morphinism
- 2- **Route of Administration:**
 - Morphine → Injection
 - Opium → Ingestion
Smoking + Goza
 - Heroin → Snuff
Inhalation
Injection
- 3- **Diagnosis of Opium Addict:**
Nalorphine → Withdrawal Symptoms (Within 15 min)
- 4- **Mechanism of Action:**
 - Endogenous → Endorphine & Enkephaline
 - Exogenous → Morphine

If No Endogenous nor Exogenous → Withdrawal Symptoms
- 5- **C / P :**

A - Physical	B - Moral (Mental)
• <u>S</u>atiety (Anorexia) • <u>S</u>kin manifestations (Needle Picks abscesses) • <u>S</u>exual (Impotence) • Miosis • Constipation	• Murder • Liar • Dishonest • Indifference • Crimes

6- TTT:

- 1) الأهل → Admit Addiction + Hospitalization (High secrecy)
- 2) الممرضة → Nutrition Drugs
- 3) النفسية → Rehabilitation
- 4) السموم → Gradual Withdrawal 3 أيام / 4 مرات في اليوم

A-Codiene ↳ SC	B-Methadone ↳ Mouth
M 30 mg ↓ m 10 mg ↓ m + C 10 mg ↓ C 10 mg	1 mg = 2 mg Heroin = 4 mg Morphine Dose : 1/3 : 1/10 : 1/20 Then STOP

ALCOHOL

C / P:

1-Physical أحمر + أصفر	2-Mental	3-Withdrawal	4-Nervous (3P)
-Conjunctivitis -Drunken nose -Bronchitis -Gastritis أحمر -Fatty Liver أصفر N.B: Fetal Alcohol Syndrome	-<u>D</u>ipsomnias شره كحولي -<u>D</u>ementia عته كحولي مبكر (↓ intellectual of mental power) -<u>D</u>elusions of jealousy (↑ sexual desire + sexual potency) -<u>D</u>elerium tremens هلاوس بصرية (terrifying) Tremors -Auditory hallucinations هلاوس سمعية - Korsakoff psychosis المؤلف ببيألف حكايات -Wernicks Encephalopathy المهزوز → -Ataxia → -Nystagmus → -Tremors	-Delerium tremens -Tremors -Hallucinations -Convulsions	- <u>P</u>reipheral Neuritis (Mixed lat. More motor) → -tremors → -impotence -<u>P</u>achymeningitis Hastica → Chronic Subdural He -<u>P</u>ain in Muscles → Myopathy

TTT:

1- الاهل

2- الممرضة

3- النفسية

4- السموم →

A

+

P

1) Antabuse (Disulfiram)

3) Promazine

+ Diazepam

(If Convulsions)

2 gm



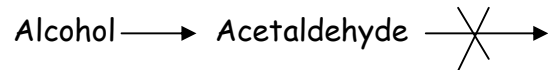
1 ½ gm



1 gm



½ gm → Year



Action: Acetaldehyde Syndrome

(Acetaldehyde + Antabuse)

Vomiting

Flushed
Conj. Red

Palpitation

المشكلة → - Rotten Egg odour
- Drowsiness

2) Temposil

BARBITURATES

بطئ ومهزوز

1-Condition of addiction: علاج لكل حالات الادمان

2-C / P:

A-Physical مهزوز	B-Mental (Moral) بطئ	C-Withdrawal
-Ataxia -Tremors -Nystagmus	-Poor thinking بطئ في التفكير -Poor memory -Slurred Speech بطئ في الكلام - <u>Hypersomnia</u> -Drowsiness	-Convulsions √√√√√ -CHAIR -Insomnia

3- TTT:

1) الأهل

2) الممرضة

3) النفسية

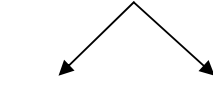
4) (نبدأ بجرعة متعلمش → Gradual (Convulsions السموم

0.5 gm (1 × 2) } يخلص علاجه
0.1 gm (1 × 2) } after 3 weeks

COCAINE

ست وحشة جدا.. شكلا وخلقا

1-C / P:

A-Physical	B-Mental	C-Withdrawal
-Loss of weight (Cachexia) -perforated nasal septum  VC Adulterations مغشوش -Needle pricks	-Cocaine bugs (Tactile Hallucinations) -Aggressive → Mentally -Toxic Psychosis	-Irritable ↓ Secretions

2-TTT:

1) الأهل

2) الممرضة

3) النفسية

4) السموم → No special TTT
Symptomatic ONLY

AMPHETAMINE

ست بارانويا (Paranoid) عايزة تخس

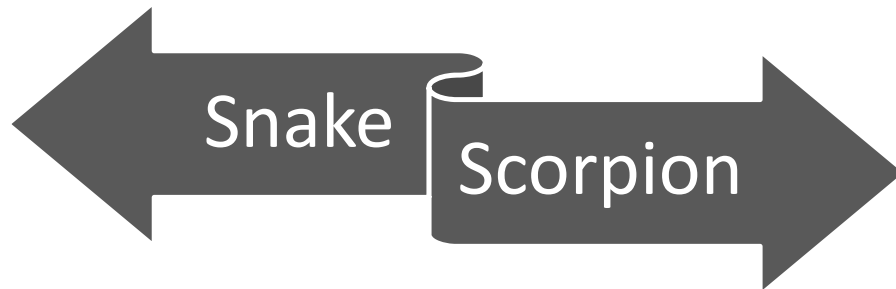
1-C / P:

A-Physical	B-Mental	C-Withdrawal
-Loss of weight -↑Bl.Pr, Palpitations -Erythema	-Insomnia + talkative +Euphoria -Parabnoid Schizophrenia -Persecution اضطهاد Psychosis	-Hyperphagia -Hypersomnia -Depression

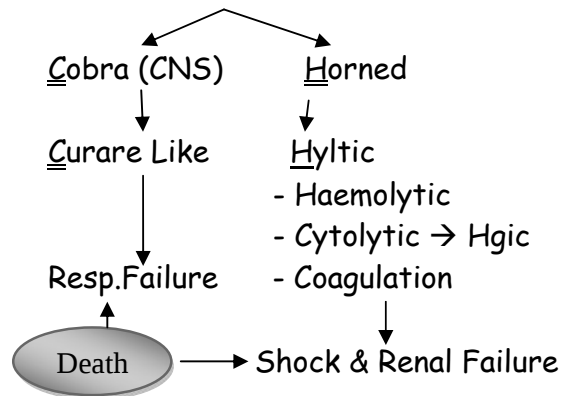
2-TTT:

Syptomatic
 (Antipsychotic, Antidepressant ,,,)

ANIMAL POISONING



SNAKE



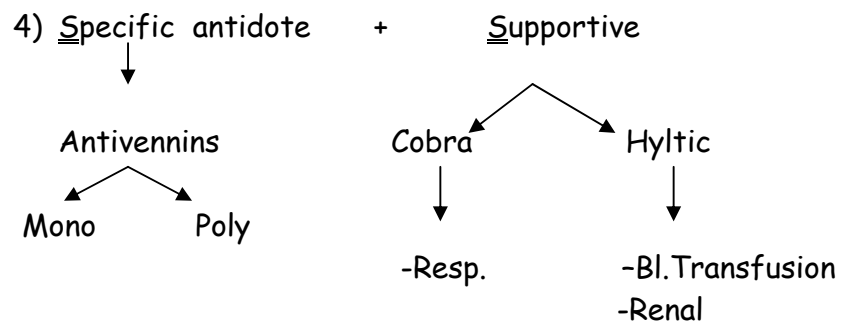
TTT:

- 1) A + B
- A Assurance
A Anti-tetanus
A Antibiotics
- B Bed rest

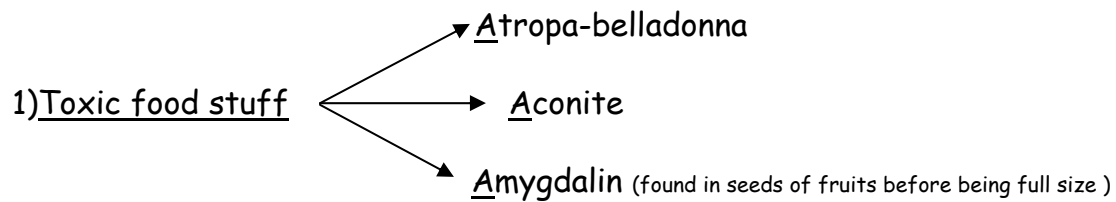
- 2) S + S
- S Solid ice
- VC
 Anaesthesia
- S Suck
 ineffective

- 3) H₂O + KM₂O₄

To detoxify the venom locally



FOOD POISONING

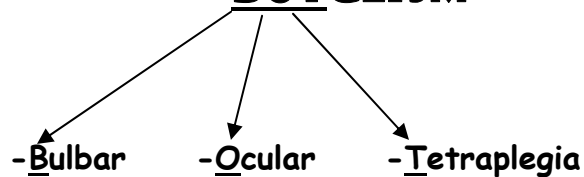


2) Food Allergy

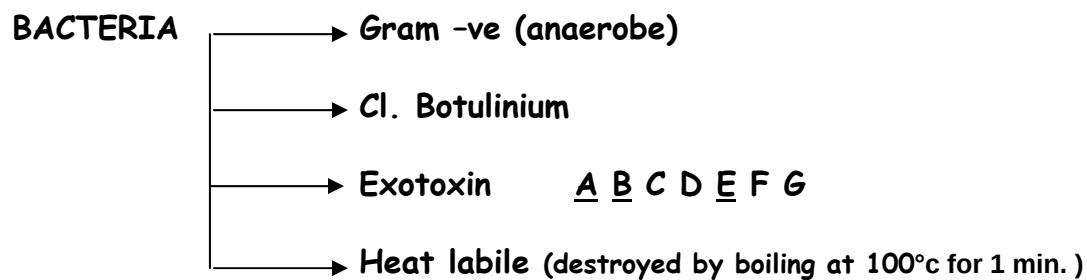
3) Contaminated Food

<i>Bacteria</i>	<i>Virus</i>	<i>Protozoal</i>	<i>Chemical</i>
Staph.	Rota	Giardia	Metallic
Salmonella		Ent. histolytica	Insecticide Preservatives

BOTULISM



- Prevent ach.



Actions:

⊖ Ach.

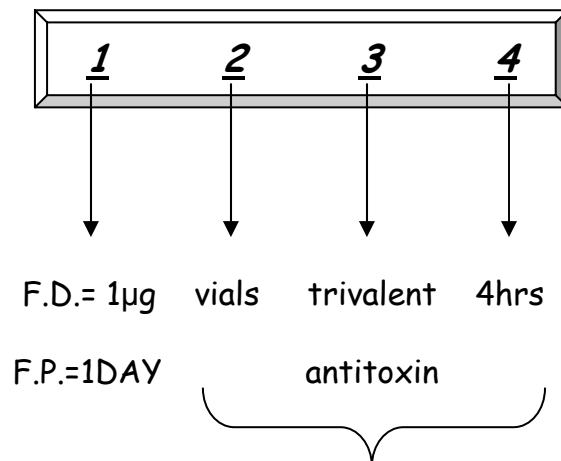
C/P:

- 1) Bulbar
- 9 (glossoph.) → dysphagia
 - 10 (vagus) → dysphonia
 - 11 (access.) → pain in ???
 - 12 (hypogloss.) → dysarthria

- 2) Prevent Ach.
- Constipation + Urine retention, Dry Mouth & Skin
 - Consious till the end
 - Dilated Fixed pupil

- 3) Ocular paralysis → Diplopia

- 4) Tetraplegia → descending & bilateral limbs → resp.ms → asphyxia



2 vials of trivalent antitoxin to be repeated after 4 hrs

TTT. :

1)S&S —————→ Care of Resp.

2)ECG —————→ Cuffed EndoTracheal tube (due to bulbar paralysis)

3)L.A. —————→ Charcoal

4)D & D √√√

5)Physiological antidote (2vials of trivalent antitoxin to be repeated after 4hrs.) .